DETROIT PUBLIC LIBRARY
JUN 13 1960
FINE ARTS



# THE ARCHITECTS' JOURNAL



*standard contents*

*every issue does not necessarily contain all these contents, but they are the regular features which continually recur*

*NEWS and COMMENT*
*Astragal's Notes and Topics*
*Letters*
*News*
*Diary*
*Criticism*

*TECHNICAL SECTION*
*Information Sheets*
*Information Centre*
*Current Technique*
*Working Details*
*Questions and Answers*
*Prices*
*The Industry*

*CURRENT BUILDING*
*Major Buildings described:*
*Details of Planning, Construction, Finishes and Costs*
*Buildings in the News*
*Building Costs Analysed*

*Architectural Appointments Wanted and Vacant*

No. 3401] [Vol. 131

*THE ARCHITECTURAL PRESS*
9, 11 *and* 13, *Queen Anne's Gate, Westminster, S.W.1.* *'Phone: Whitehall* 0611

*Price* 1s. 0d.

*Registered as a Newspaper.*

★A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ii one week, Il to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

| | | |
|---|---|---|
| ILA | Institute of Landscape Architects. 1, Park Crescent, Portland Place, W.1. | Museum 3473 |
| I of Arb | Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. | Temple Bar 4071 |
| IOB | Institute of Builders. 48, Bedford Square, W.C.1. | Museum 7197 |
| IQS | Institute of Quantity Surveyors. 98, Gloucester Place, W.1. | Welbeck 1859 |
| IR | Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. | Avenue 6851 |
| IRA | Institute of Registered Architects. 68, Gloucester Place, W.1. | Welbeck 9966 |
| ISE | Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1. | Sloane 7128 |
| JFRO | Joint Fire Research Organisation (DSIR & Fire Offices' Committee), Fire Research Station, Boreham Wood, Herts. | Elstree 1341/1797 |
| LDA | Lead Development Association. 18, Adam Street, W.C.2. | Whitehall 4175 |
| LMBA | London Master Builders' Association. 47, Bedford Square, W.C.1. | Museum 3891 |
| MAFF | Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1. | Trafalgar 7711 |
| MOE | Ministry of Education. Curzon Street House, Curzon Street, W.1. | Hyde Park 7070 |
| MOH | Ministry of Health. 23, Savile Row, W.1. | Regent 8411 |
| MOHLG | Ministry of Housing and Local Government. Whitehall, S.W.1. | Whitehall 4300 |
| MOLNS | Ministry of Labour and National Service, 8, St. James's Square, S.W.1. | Whitehall 6200 |
| MOS | Ministry of Supply. Shell Mex House, W.C.2. | Gerrard 6933 |
| MOT | Ministry of Transport, Berkeley Square House, Berkeley Square, W.1. | Mayfair 9494 |
| MOW | Ministry of Works. Lambeth Bridge House, S.E.1. | Reliance 7611 |
| NAMMC | Natural Asphalte Mine Owners and Manufacturers Council. 14, Howick Place, Victoria Street, S.W.1. | Victoria 1600 & 6477 |
| NAS | National Association of Shopfitters. 2, Caxton Street, S.W.1. | Abbey 4813 |
| NBR | National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1. | Welbeck 0619 |
| NCBMP | National Council of Building Material Producers. 10, Storey's Gate, S.W.1. | Abbey 5111 |
| NEFMAI | National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2. | Trafalgar 3927 |
| NFBTE | National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. | Langham 4041/4054 |
| NFBTO | National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4. | Macaulay 4459 |
| NFHS | National Federation of Housing Societies. 12, Suffolk St., S.W.1. | Whitehall 1631 |
| NHBRC | National House Builders Registration Council. 58, Portland Place, W.1. | Langham 0064/5 |
| NPL | National Physical Laboratory. Head Office, Teddington. | Molesey 1380 |
| NRDB | Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. | Mansion House 9383 |
| NSAS | National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1. | Trafalgar 6838 |
| NT | National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. | Whitehall 0211 |
| PEP | Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. | Whitehall 7245 |
| RCA | Reinforced Concrete Association. 94, Petty France, S.W.1. | Abbey 4504 |
| RIAS | Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. | Fountainbridge 7631 |
| RIB | Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. | Wimbledon 5101 |
| RIBA | Royal Institute of British Architects. 66, Portland Place, W.1. | Langham 5533 |
| RICS | Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. | Whitehall 5322/9245 |
| RFAC | Royal Fine Arts Commission. 5, Old Palace Yard, S.W.1. | Whitehall 3935 |
| RS | Royal Society. Burlington House, Piccadilly, W.1. | Regent 3335 |
| RSA | Royal Society of Arts. 6, John Adam Street, W.C.2. | Trafalgar 2366 |
| RSH | Royal Society of Health. 90, Buckingham Palace Road, S.W.1. | Sloane 5134 |
| SBPM | Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. | Victoria 2186 |
| SE | Society of Engineers. 17, Victoria Street, Westminster, S.W.1. | Abbey 7244 |
| SFMA | School Furniture Manufacturers' Association. 30, Cornhill, E.C.3. | Mansion House 3921 |
| SIA | Society of Industrial Artists. 7, Woburn Square, W.C.1. | Langham 1984/5 |
| SIA | Structural Insulation Association. 32, Queen Anne Street, W.1. | Langham 7616 |
| SNHTPC | Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen. | |
| SPAB | Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. | Holborn 2646 |
| TCPA | Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. | Temple Bar 5006 |
| TDA | Timber Development Association. 21, College Hill, E.C.4. | City 4771 |
| TPI | Town Planning Institute. 18, Ashley Place, S.W.1. | Victoria 8815 |
| TTF | Timber Trades Federation. 75, Cannon Street, E.C.4. | City 5040 |
| WDC | War Damage Commission. 6, Carlton House Terrace, S.W.1. | Whitehall 4341 |
| ZDA | Zinc Development Association. 34, Berkeley Square, W.1. | Grosvenor 6636 |

# ACME —FLOORING SPECIALISTS FOR 100 YEARS

**IMMOVABLE-ACME** HARDWOOD FLOORS

**ACMEPAVING** FOR FACTORY FLOORS

**ACMETYLE** SUPER P.V.C. TILES

**ACMELYNO** LINOLEUM

**ACMECORK** CORK TILES

**ACMETRED** RUBBER FLOORING

**ACMEPYLE** FITTED CARPETS

**ACME** FLOOR RENOVATION SERVICE

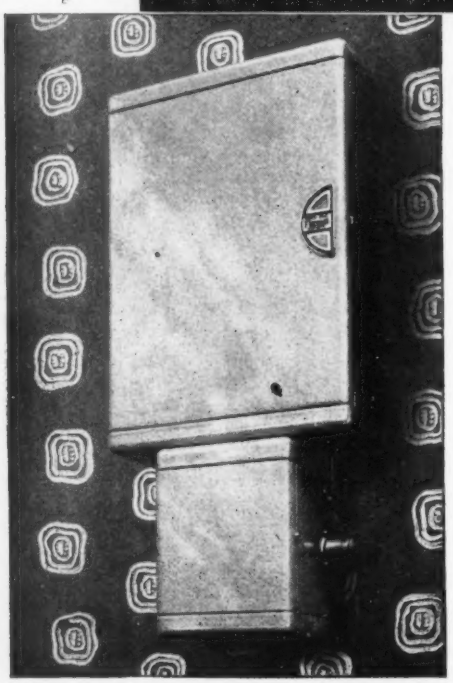
*Technical Brochures gladly sent on request.*

**ACME** FLOORING & PAVING CO. (1904) LIMITED

RIVER ROAD, BARKING, ESSEX. RIPpleway 2771 (P.B.X.)

AEROFLEX **Fluvent**

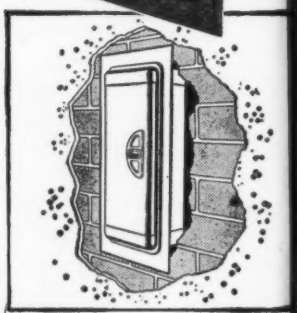
## CABINET STYLE





# DISTRIBUTION BOARDS

All boards are equipped with Aeroflex Energy Limiting High Breaking Capacity rewireable Cartridge fuse-links and where an isolating switch is required the units can be supplied in pairs as shown in the illustration (left). Cabinet Style Boards have exteriors which are designed to be harmonious in almost any surroundings.



The range of Cabinet Style distribution boards has been augmented by the production of recessed mounting alternatives, as here illustrated (right) which are suitable for mounting so that the main body of the board is sunk in a wall cavity of appropriate depth, and the plasterwork and wall finish made up to the surface plate provided.

*Parmiter Hope & Sugden Ltd*

FLUVENT ELECTRICAL WORKS LONGSIGHT MANCHESTER

London: 34 Victoria St., S.W.1. Glasgow: 5 Somerset Place, C.3. Birmingham: 39/41 Carrs Lane,

YEARS

ING
TED

P.B.X.)





Ltd
ESTER
rrs Lane,
dmPH



Problem: **FUMES**

Solution: **COLT** Ventilation

Place: **ARTHUR GUINNESS SON & CO**
**Pomona Docks, Manchester Region.**



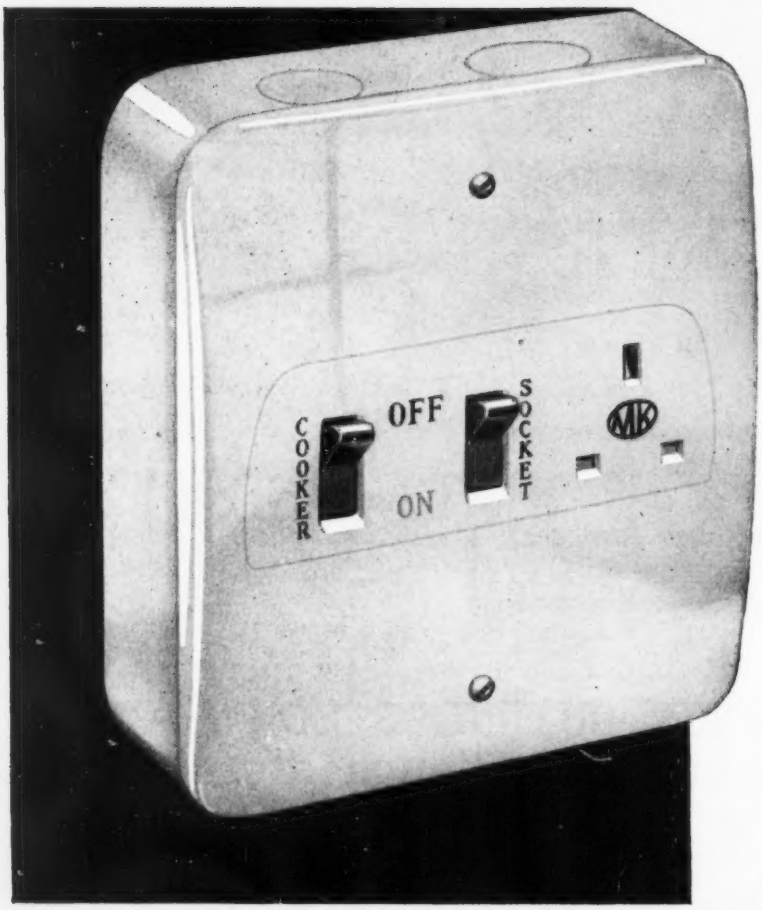
Exhaust gases from fork lift trucks and lorries were once a major problem in this storage shed. Colt experts were called in to make a scientific analysis and on their recommendation a series of Colt S.R.C./3080 High Duty Extract Ventilators was installed. Fumes no longer bother anyone.

In providing a permanent solution to this ventilation problem Colt have added yet another chapter to their record of success—success which has brought repeat orders from many world-famous concerns.

Ask your secretary to send for a free manual to Dept. L38

**COLT VENTILATION LIMITED SURBITON SURREY TELEPHONE: ELMBRIDGE 0161**

# REDUCED PRICES FOR MK COOKER CONTROL UNITS




Substantial price reductions have been made possible by retooling and improved manufacturing technique. At the same time improvements in design and quality have been embodied.

*** EPOXY ENAMEL FINISH**

**This well-known quality of enamel is renowned for high surface finish, superior adhesion, corrosion resistance and general durability. Epoxy enamel is spray-applied and stoved at high temperature to the zinc-coated steel boxes and lids, which are Bonderised after forming.**

*** ADDITIONAL EARTH TERMINAL**

**This is attached direct to the chassis, in addition to the existing earthing terminal in the base of the box.**

*** EXTRA FIXING HOLES**

**Metalclad units now have additional fixing holes on 2⅜" centres in the base of the box, in order that they may be fixed over a BS 1299/1363 box sunk in the wall.**

*** COPPER INTERCONNECTIONS**

**The interconnecting straps between main switch terminals and socket contacts have been changed from brass to solid copper, to avoid corrosion due to season cracking in moist conditions.**

* * *

Metalclad Cooker Control Units comply with BS 438 and BS 1833 so far as is relevant. Available with 13 amp (Rectangular Pin) Shuttered Socket-Outlets to BS 1363 and also 15 amp (Round Pin) Shuttered Socket-Outlets to BS 546. Surface or Flush mounting with or without Pilot Indicating Lamps. A range of All Insulated Surface Mounting Cooker Control Units are also available.

## M.K. FOREMOST FOR VALUE IN COOKER CONTROL UNITS

**Have you received Leaflet No. 254?**

**M.K. ELECTRIC LIMITED, SHRUBBERY ROAD, EDMONTON, LONDON, N.9. EDMONTON 5151**
MK 178 DHB

# THE MODERN WAY



*Architect: S. P. Youldon, M.C., F.R.I.C.S., M.I.Mun.E., L.R.I.B.A. Chartered Municipal Engineer and Registered Architect.*

*BEECH HOUSE FLATS, HOLLY BUSH ESTATE, WHITCHURCH, GLAM.*

*Contractors: L. J. Hope, Ltd., Cardiff. Cardiff Rural District Council.*

Here is a good example of flat construction. The clean lines, ample window space and balconies for open air living follow the modern style.

**LIKEWISE THE CONTRACTORS FOLLOWED THE MODERN TREND BY USING FEBMIX DEHYDRATED MORTAR PLASTICISER IN BOTH THE BRICKLAYING AND PLASTERING MORTARS.**

Using only a half ounce of **FEBMIX DEHYDRATED** Mortar Plasticiser per cwt. of cement in a mortar mix of 1 cement to 6 sand produced a mortar having good strength, a high degree of plasticity and maximum durability at a cost well below that of any other type of mortar mix.

## FEBMIX DEHYDRATED MORTAR PLASTICISER

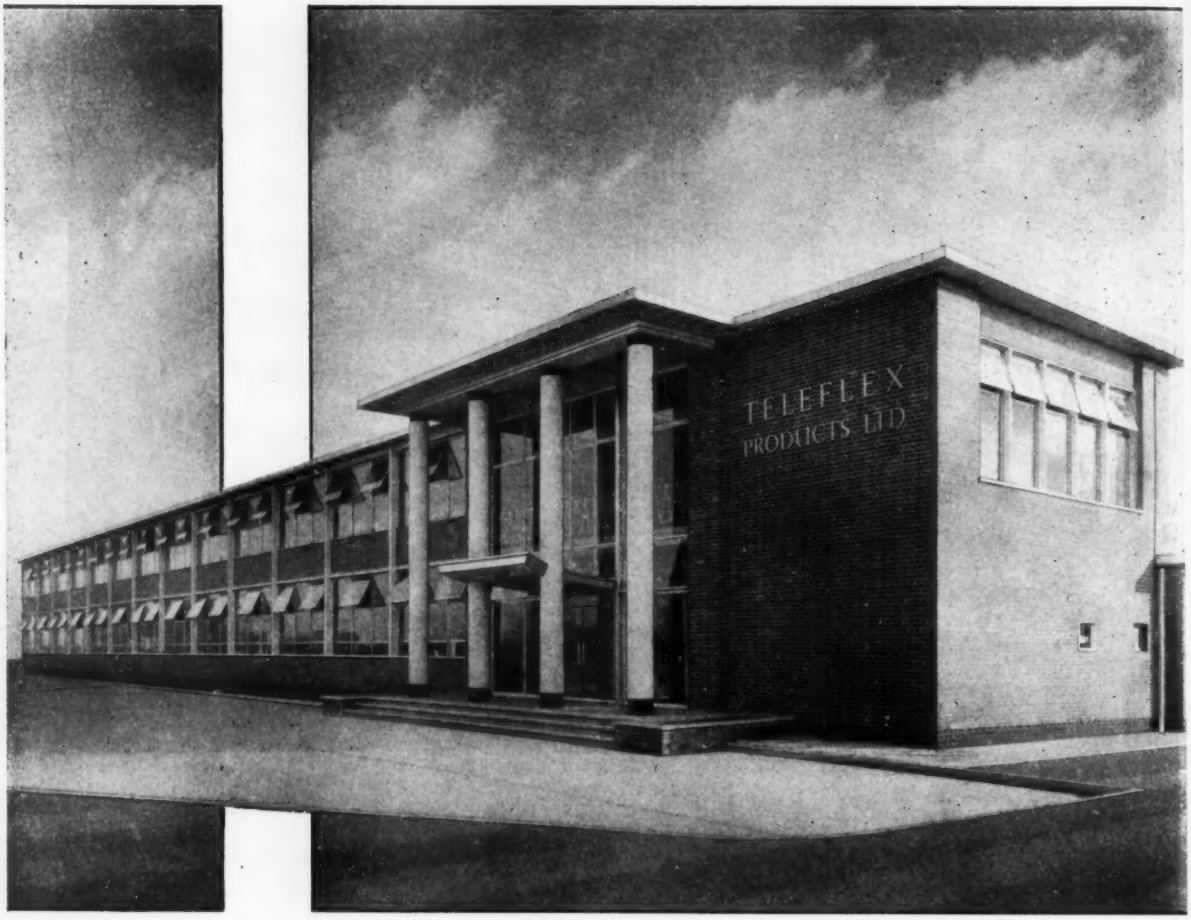
## *IT COSTS YOU MONEY NOT TO USE IT!*

FEB

102 Kensington High Street, London, W.8. *Telephone:* WES. 0444
**(GREAT BRITAIN) LTD.**
Albany Road, Chorlton-cum-Hardy, Manchester 21. *Telephone:* CHO. 1063

DHB 8272

# aluminium windows...




# ...and doors

for the

Teleflex Products Limited, Basildon

Architects :

Basildon Development Corporation

Consultant Architect :

Francis Smith, Esq., F.R.I.B.A., F.R.I.C.S.

*by*

## MELLOWES & CO. LTD.

SHEFFIELD LONDON OLDHAM



Type 'A' Linenfold

LW BOARD

# TYPE 'A'

## (LINENFOLD)

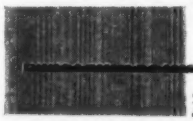
# MOULDED HARDBOARD

## *Now Available*

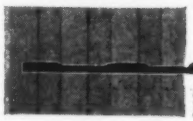
# LONG AND CROSS MOULDED



Type 'B' Reed and Bead



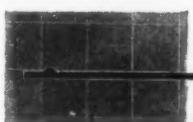
Type 'C' Striated



Type 'D' Slatted

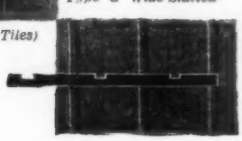


Type 'E' Close Slatted



Type 'G' Wide Slatted

Type 'F' Tiled (4" Tiles)



Type 'H' 2" Corrugated



With its attractive design and exceptional strength, L.W Type 'A' Moulded Hardboard is ideal for interior fitting and decorating of every description in home and office, shop and exhibition.

Now available with pattern running the 9′ way or the 4′ way, L.W. Type 'A' Linenfold gives greater scope for decorating and fitting than ever before.

L.W Type 'A' is one of eight different types of L.W. Moulded Hardboards — all of which have the many advantages of L.W. Swedish Hardboard.

*Available in sheets 9′ x 4′, $\frac{1}{8}$″ thick.*
*L.W. Moulded Hardboards are effective either in their rich natural colours, or painted.*

LW BOARD

# MOULDED HARDBOARDS

*Manufactured by:*

**MESSRS. LJUSNE-WOXNA A.B., SWEDEN**

*Write for full details today to sole agents for U.K. (excluding Northern Ireland):*

**MESSRS. MARTIN OLSSON (FIBREBOARDS) LTD.,**
**MELBOURNE HOUSE, ALDWYCH, LONDON, W.C.2.**




COMPACTOM

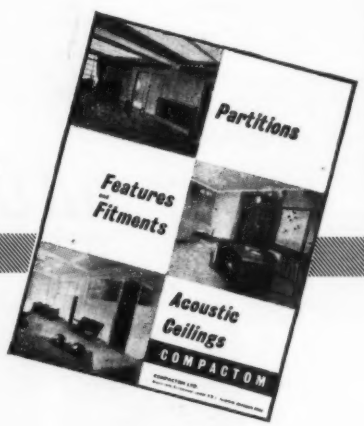
partitions and acoustic ceilings

PLANNING GUIDE

**The Compactom Planning Guide contains just the sort of information you need when solving problems involving**

- DRY CONSTRUCTION DEMOUNTABLE PARTITIONS
- COMPACTOM MINIWALL DWARF PARTITIONS
- ACOUSTIC CEILINGS AND TREATMENT
- FITMENT WORK • TOILET CUBICLES

*Ask us today for your copy*

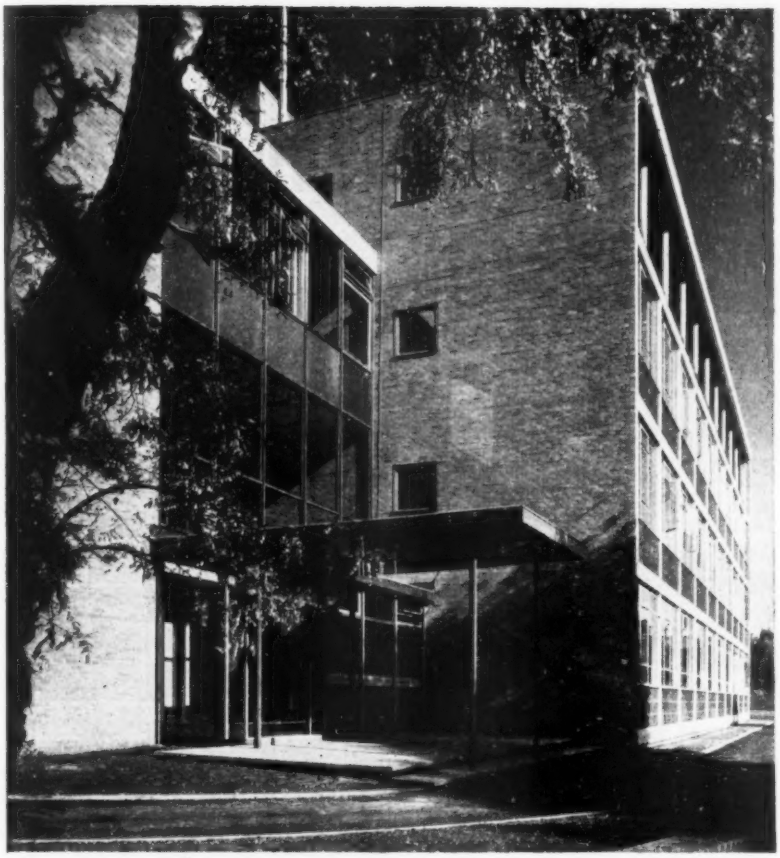



COMPACTOM LTD

*Specialists in Partitions and Acoustic Ceilings*

OXGATE LANE • CRICKLEWOOD • LONDON N.W.2

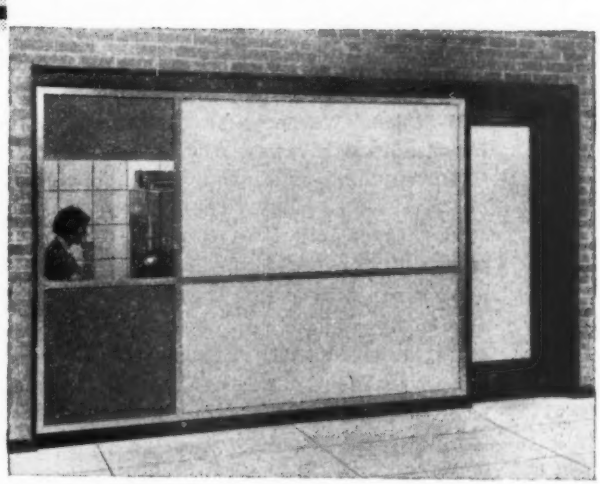
GLAdstone 6633



*'PLYGLASS' Clear, Diffusing, and Lettered Double-Glazing Units have been used throughout the new office block for the Cambridge Instrument Company Ltd. Architects Edward D. Mills & Partners. Illustrations reproduced by permission of 'Architect & Building News'.*

# PLYGLASS makes it possible

...to rise above traditional limitations ...to get maximum light without glare or shadow ... to insulate against winter cold, summer heat, and traffic noise ... to build curtain walls that are thinner and lighter ... to add permanent weather-proof colour ... to cut labour costs and speed erection and to lessen maintenance costs ...



***... for more information on***

## *'PLYGLASS' CLEAR AND DIFFUSING DOUBLE-GLAZING UNITS AND VITROSLAB INFILL PANELS*

write to PLYGLASS LIMITED · EDINBURGH WAY · HARLOW · ESSEX

Tel: Harlow 24271 Cables: Plylux, Harlow
City Office: 18 London Street, London E.C.3. Tel: ROYal 8511
Northern Office: 8 Eldon Terrace, Leeds 2. Tel: 25792

*'PLYGLASS' is the registered trade mark of Plyglass Limited.*

# Why WEYDEC is the 'product of the future'* for ARCHITECTS



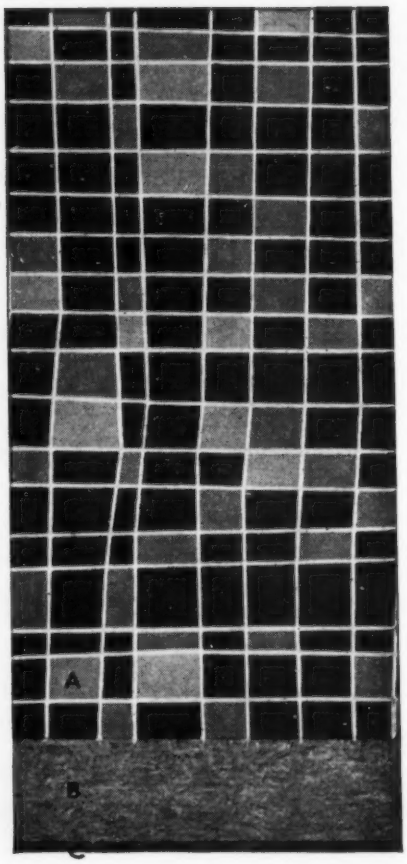
WEYDEC offers an exceptional advantage to Architects — it is a *constructional* board with its plastic surface already *factory bonded* to a Weyroc core. This advantage shows itself in various ways:

**COMPLETE DEPENDABILITY.** Basically, the value of Weydec is the strength of its Weyroc core—a first-class precision board. This means that you can specify whatever plastic-surfaced unit you want in colourful, hardwearing WEYDEC, *knowing* that the finished job will be entirely to your satisfaction.

**COST-SAVING.** Weydec saves costs in two important ways. Because it does away with the 'glue-pot', it saves your *contractor* time and labour. And, because a ready-bonded plastic-surfaced board costs less than buying the board and surface separately, it saves money for your *client*.

**CHOICE.** Weydec is available in a standard range of patterns for normal use—one of these attractive patterns is reproduced here.

**AND STILL MORE CHOICE.** In addition, you are welcome to take full advantage of our Design Service. Through this, you can have your own design or patterns from Sanderson's decorative laminating paper incorporated into the melamine surface of Weydec.



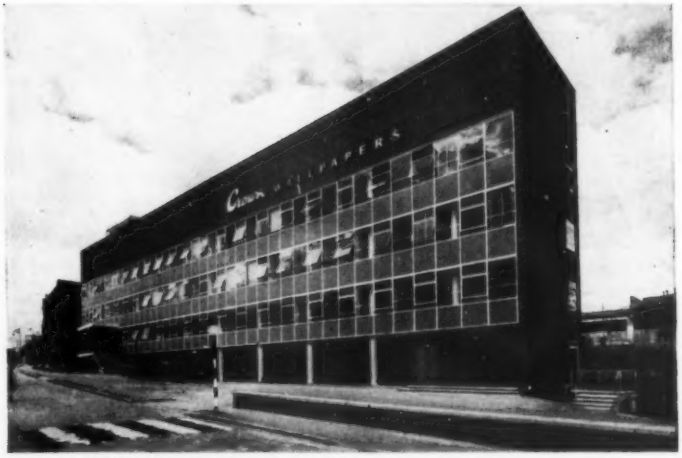

**A.** This design is one of the new Weydec surfaces.
**B.** The Weyroc core (¼" or ⅜").
**C** Non-decorative plastic balancer on reverse side.

* *This means* from today onwards! *Greatly expanded production of Weydec now makes it possible for you to get all you want. So, contact your Weydec Distributor straightaway!*

**weydec**
**melamine surfaced Weyroc**

*Write for a free sample to:—*
THE AIRSCREW COMPANY & JICWOOD LTD · Dept. **AJ.16** · WEYBRIDGE · SURREY · TEL: WEYBRIDGE 2242/7
WPS74

# ESCOL



*Architects: Ralph Tubbs, O.B.E., F.R.I.B.A.*

# THE LONG, THE SHORT, AND THE TALL

**The appearance of all buildings, small or large, is impressively improved by Escol Infilling Panels. They combine durability, strength, heat and sound insulation with beauty of texture and colour.**

ESCOL PANELS are:

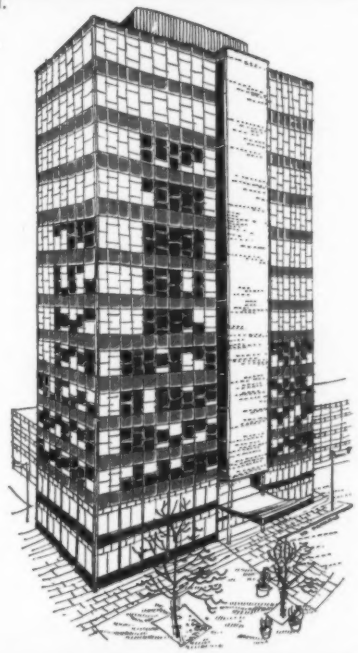
*Porcelain surfaced steel which gives permanent protection against corrosion.*

*Light in weight and made in various shapes and sizes.*

*Finished in any colour and a variety of textures: granite, stipple, gloss, semi-matt and matt.*

*Resistant to attack by normal atmospheric conditions and sea air.*

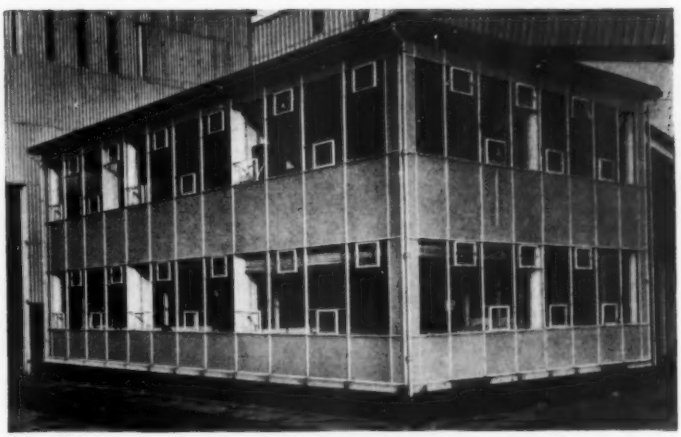
**Stewart and Gray Ltd. offer a specialised service in the development, manufacture and all technical aspects of porcelain enamelled steel in architecture. It is at the disposal of all architects.**



## ESCOL PANELS *NEVER*

**lose their original surface finish and colour**

***THESE ARE PERMANENT***



*Colvilles Iron & Steel Co. Ltd., Ravenscraig Works, Motherwell.*
*Architects: Wylie, Shanks & Underwood, Glasgow.*



**STEWART & GRAY LTD** SWAINS RD, LONDON, SW17. Tel: MITcham 1634 (5 lines)

Members of the Vitreous Enamel Development Council and the Porcelain Enamel Institute

P.3754

# This is a Stelrad



Stelrad

**STEEL RADIATORS LIMITED**

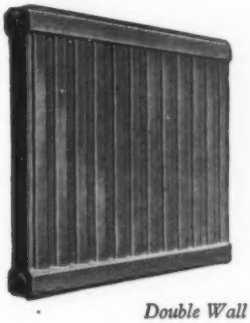
BRIDGE ROAD, SOUTHALL MIDDLESEX

Telephone: SOUthall 2603

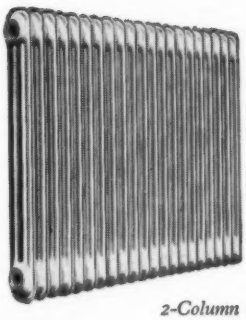
# the Radiator that's made in the size you want, and in the shape your client likes



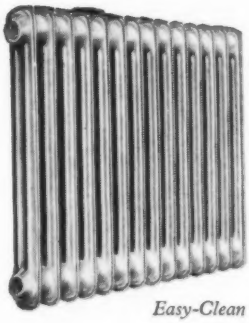
*Wall*



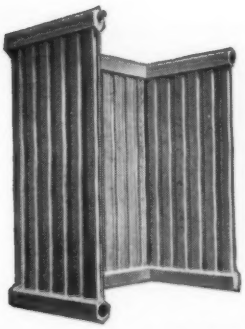
*Double Wall*



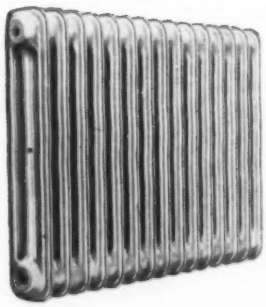
*2-Column*



*Easy-Clean*



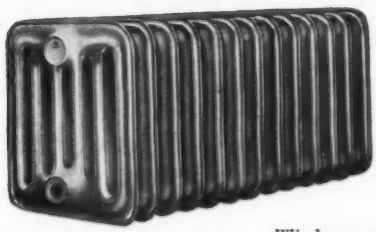
*Angle-Wall*



*3-Column*

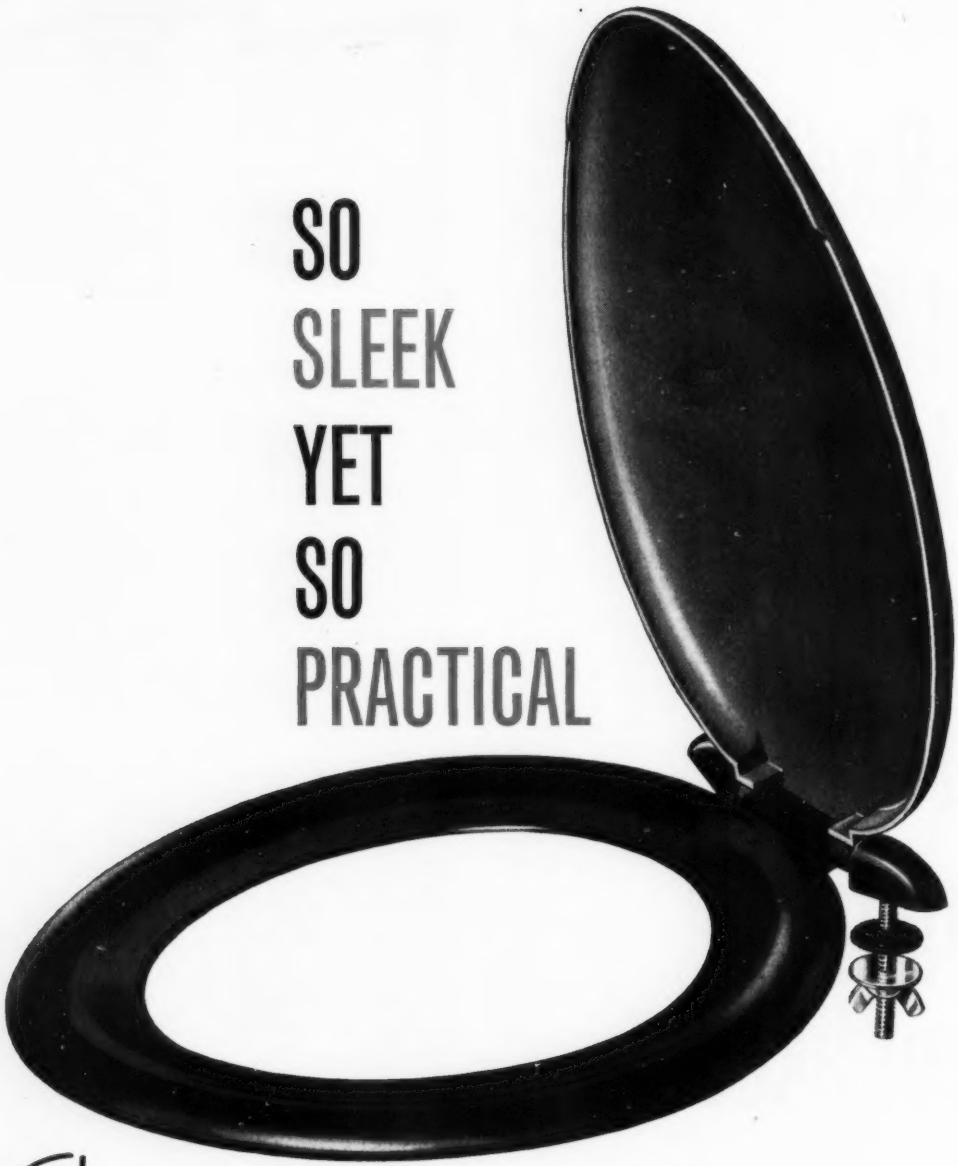
## PATENTED PROCESS RADIATORS

Now who would have thought the Stelrad Steel Radiator had been with us for nigh on twenty-five years ? Why, you can probably remember people telling about it at the time. Some were doubters, holding forth about steel and how the only Radiator to use was one that was not only heavy to handle but ungainly to behold. But where is the Stelrad today ? In buildings large and small throughout the length and breadth of the land, and in a range so wide there is not a single nook a Stelrad cannot heat.



*Window-seat type*

# SO SLEEK YET SO PRACTICAL



## Shires 'continental' seat

As a replacement or a new fitment, no other toilet seat in this price range has the advantages offered by Shires 'Continental'.

**THE SEAT**

Light, shapely, slim—but virtually unbreakable. Unique bufferless construction is allowed by the supreme strength of the exclusive black material used.

**THE COVER**

Stylish, elegant, beautifully designed. Completely overlaps the seat for extra hygiene. Available in colours to tone with any bathroom scheme: green, primrose, red, turquoise, deep blue, blue, ivory, pink, white and black.

**FITTING**

Adjustable hinges mean the assembly can be fitted to leading makes of pan *without the use of tools.*

**SHIRES ARE THE LARGEST MANUFACTURERS OF MOULDED FLUSHING CISTERNS IN THE WORLD**

*They also make the Uni-Lynx close-coupled suite.*

*Full details and trade terms from Division 5a,* **SHIRES & CO. (LONDON) LIMITED, GUISELEY, YORKS.**
*(also at LONDON, BIRMINGHAM & GLASGOW) ; Shires (Ireland) Limited, Dublin*

made by Shires of Guiseley for your convenience

S73



# Today, it's *'NO-CONTACT'* hand-drying

***—less expensive***

***—more hygienic***

The 'ENGLISH ELECTRIC' Hand-Drier will quickly pay for itself by sheer savings in running costs.

This economical method of hand-drying is also the most hygienic. Each hand-dry is as thorough and germ free as the first. The Hand-Drier is pleasant to use and makes for a tidy cloakroom.

Both motor and element are continuously rated.

*Send for Publication FP/106 to The English Electric Co. Ltd., F.H.P. Motors Department, Bradford.*

# 'ENGLISH ELECTRIC'

## hand-driers

***"48 pleasant, hygienic 'hand-dries' for one unit of electricity"***

THE ENGLISH ELECTRIC COMPANY LIMITED, MARCONI HOUSE, STRAND, LONDON. W.C.2.

WORKS: STAFFORD · PRESTON · RUGBY BRADFORD · LIVERPOOL · ACCRINGTON

HD.12

# Renaissance

*a new dimension in translucent vinyl flooring . . . with all the beauty and many times the life of natural marble. Renaissance: an inspiring design in*

# AMTICO

*probably the most beautiful flooring the world has ever known.*

Imagination takes the floor — and wall —when Renaissance takes your eye. And this superlative Amtico quality is, indeed, fast taking the eye of architects and designers and decorators. Here's more than the subtle colours, the natural effects, of real marble. Here's a *depth*, a translucence, that only Amtico solid vinyl can offer. And wear. Long, hard wear. Tests show that Renaissance will outlast marble forty times. This despite such modern-day things as *stiletto heels* and abrasive chemicals. Like all Amtico solid vinyl flooring, Renaissance is resilient: therefore it *gives* under foot, and is comparatively quiet in use. One thousand eight hundred square feet of Renaissance have just been laid in the foyer and lounge of the Royal Hibernian Hotel in Dublin, to the design of John Siddeley. And at the 1960 Ideal Home Exhibition, Amtico flooring was selected for the huge Radiation stand and for the flooring in the kitchen, living room and family room in the American house. It handsomely adorned the walls of the bathroom in the Georgian House. Launched in Britain at the beginning of the year, Amtico is becoming accepted far and wide. It's being talked about. People are discussing its properties. Wear . . . resilience . . . translucency . . . colour . . . and not least, *designs*. Plain, Terrazzo, Wood Grain, Cork, Eldorado Metal, Stardust. And in addition, Amtico can repeat just about *any* element of design from wallpaper, fabric, insignia or photographs. You may already have heard Amtico discussed. Now: see the marvel itself in displays and laid floors and walls which show the complete range made by the world's largest producers of solid vinyl. Humasco Limited hold stocks and offer a technical and design service. Please come. Ring CITy 1056, or write to the address below, suggesting when you may be expected.

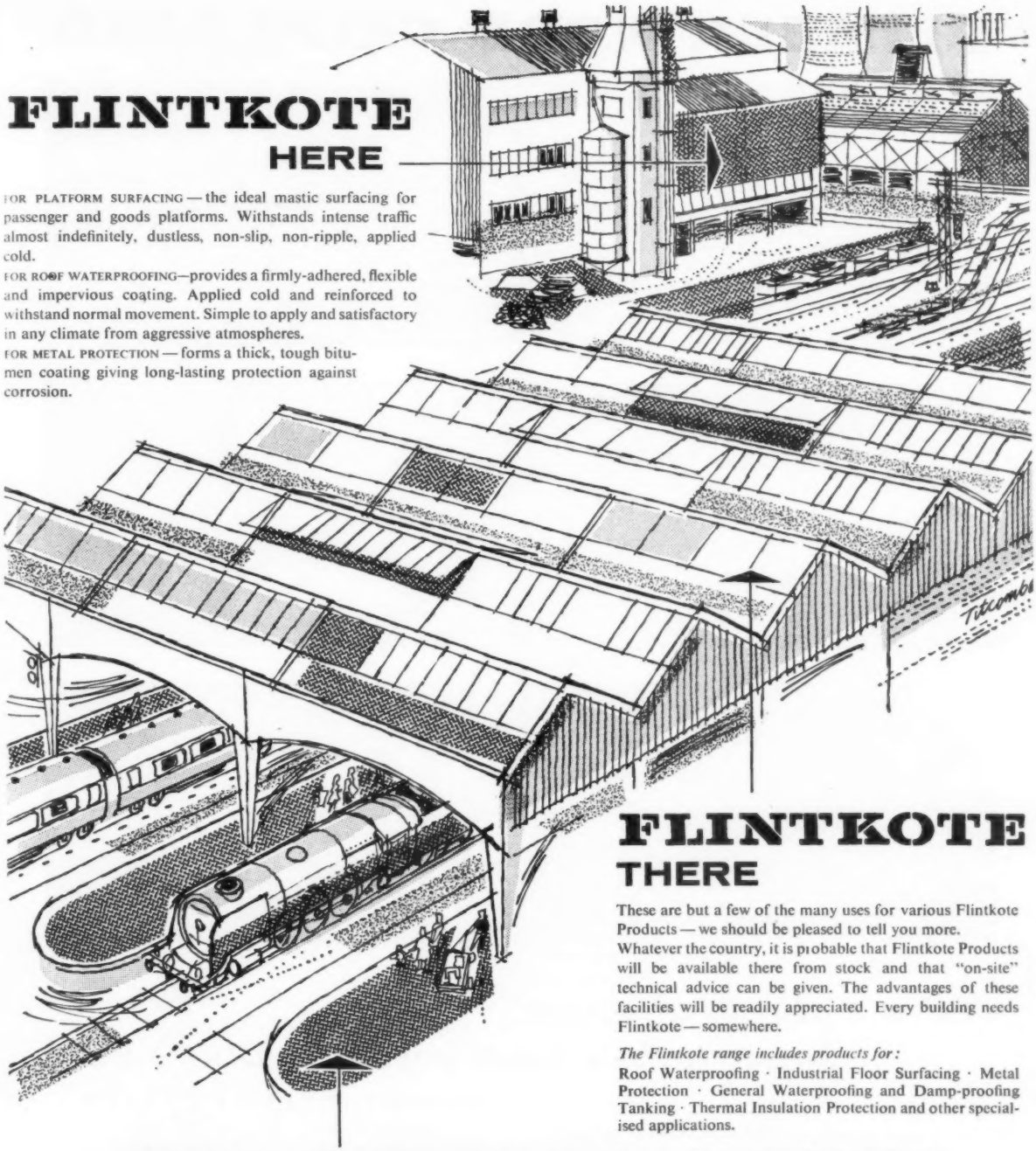
**HUMASCO LIMITED** · *VINYL COVERINGS* · 23 OLD BAILEY · LONDON · E64

# FLINTKOTE HERE

FOR PLATFORM SURFACING — the ideal mastic surfacing for passenger and goods platforms. Withstands intense traffic almost indefinitely, dustless, non-slip, non-ripple, applied cold.

FOR ROOF WATERPROOFING—provides a firmly-adhered, flexible and impervious coating. Applied cold and reinforced to withstand normal movement. Simple to apply and satisfactory in any climate from aggressive atmospheres.

FOR METAL PROTECTION — forms a thick, tough bitumen coating giving long-lasting protection against corrosion.



# FLINTKOTE THERE

These are but a few of the many uses for various Flintkote Products — we should be pleased to tell you more.
Whatever the country, it is probable that Flintkote Products will be available there from stock and that "on-site" technical advice can be given. The advantages of these facilities will be readily appreciated. Every building needs Flintkote — somewhere.

*The Flintkote range includes products for:*
Roof Waterproofing · Industrial Floor Surfacing · Metal Protection · General Waterproofing and Damp-proofing Tanking · Thermal Insulation Protection and other specialised applications.

# ...FLINTKOTE Regd.



GARE DE MULHOUSE — FRANCE (S.N.C.F.) Flintkote flooring in busy goods depot subjected to heavy traffic.

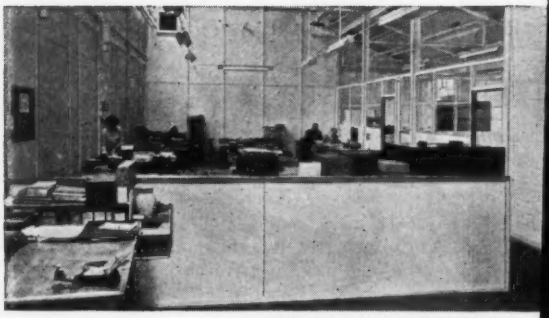
## ALMOST EVERYWHERE

FLINTKOTE

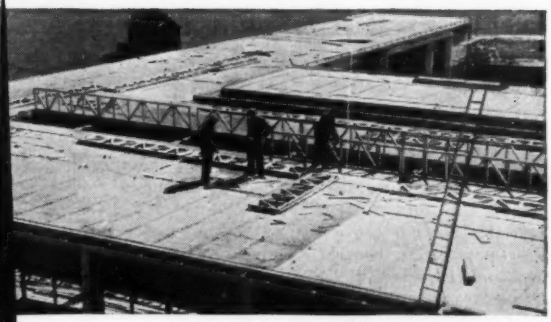
**THE FLINTKOTE COMPANY LIMITED**
Adam House · One Fitzroy Square · London W.1
*Telephone: EUSton 7224.*

P.7

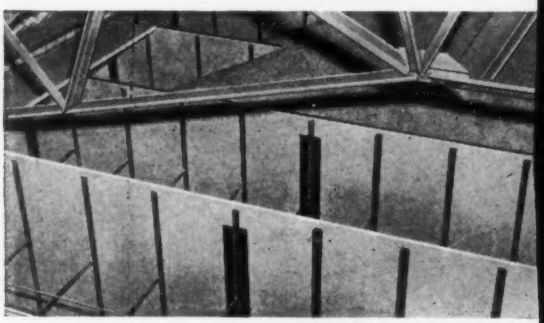
# PLIMBER WOOD CHIPBOARD



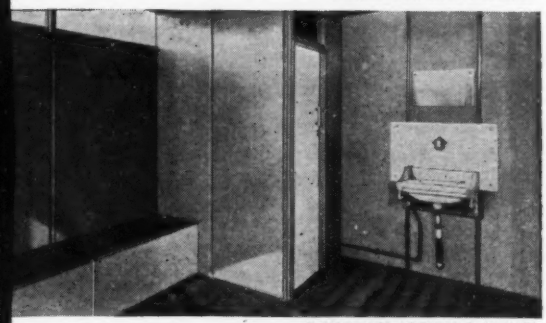
PLIMBER FOR COUNTERS & PARTITIONS



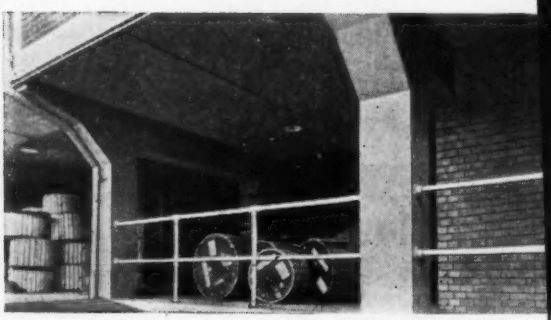
PLIMBER FOR ROOF DECKING



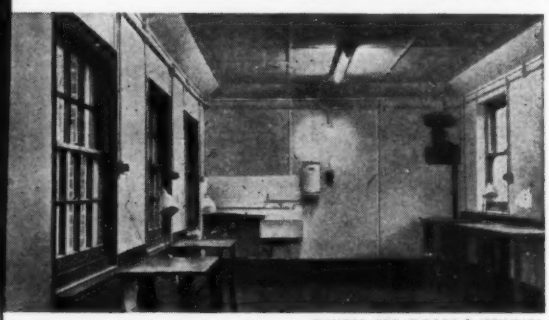
PLIMBER FOR GRAIN STORAGE



PLIMBER FOR LOCKERS & LININGS



PLIMBER FOR FORMWORK



PLIMBER FOR FLOORS & CEILINGS

## *There's plenty of scope for Britain's most versatile Chipboard*

With its increased strength, wear resistance, and water resistance, Plimber is a highly satisfactory sheet material for such heavy-duty uses as industrial flooring, racking for engineers' stores, concrete formwork above or below ground, and a great many other load-bearing purposes; equally it is ideal for making cupboards, fitments or furniture, as well as partitioning, lining and panelling.

**PLIMBER WOOD CHIPBOARD**

Standard size . . . . . 8ft. x 4ft.
Maximum size . . . . . 16ft. x 4ft.

**PLIMBER WOOD CHIPBOARD**

Thicknesses . . . . . $\frac{1}{2}$in. & $\frac{3}{4}$in.
Density . . . . . 45 lbs/cu. ft.

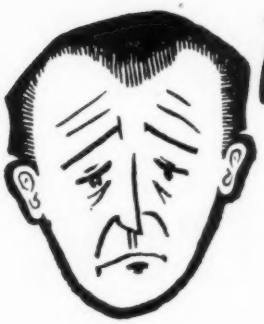
**PLIMBER WOOD CHIPBOARD**

Grades : Standard PLIMBER 45
Wood Veneered PLIMBER

*For technical literature, prices, and names of stockholders, please write or telephone :—*

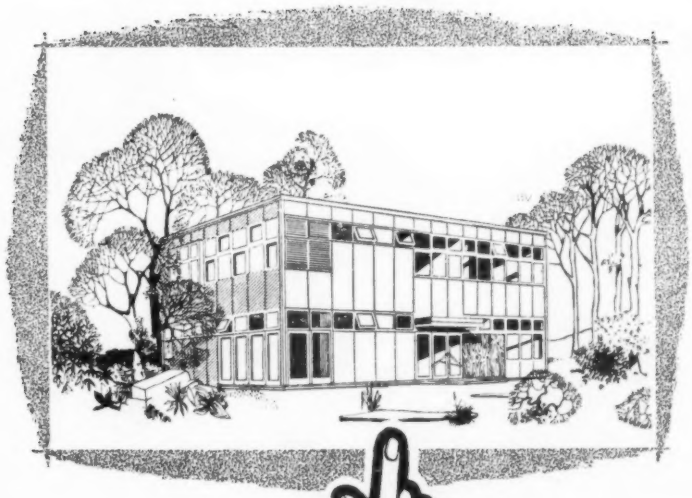
## BRITISH PLIMBER LIMITED

**Rainham, Essex.** **Telephone : Rainham 5262**



Bricks are scarce





Let SECO solve your building problems

Bricks are scarce. Seco units are the answer.

The SECO system provides the designer with a new and flexible medium to give effect to his ideas.

The architect's drawing above shows the pleasing effect achieved by building WITHOUT BRICKS.

It is an office block for Bryans Aeroquipment Ltd., Mitcham, Surrey, and is of entirely 'dry' construction.

*Write for information to :—*

Supply Department

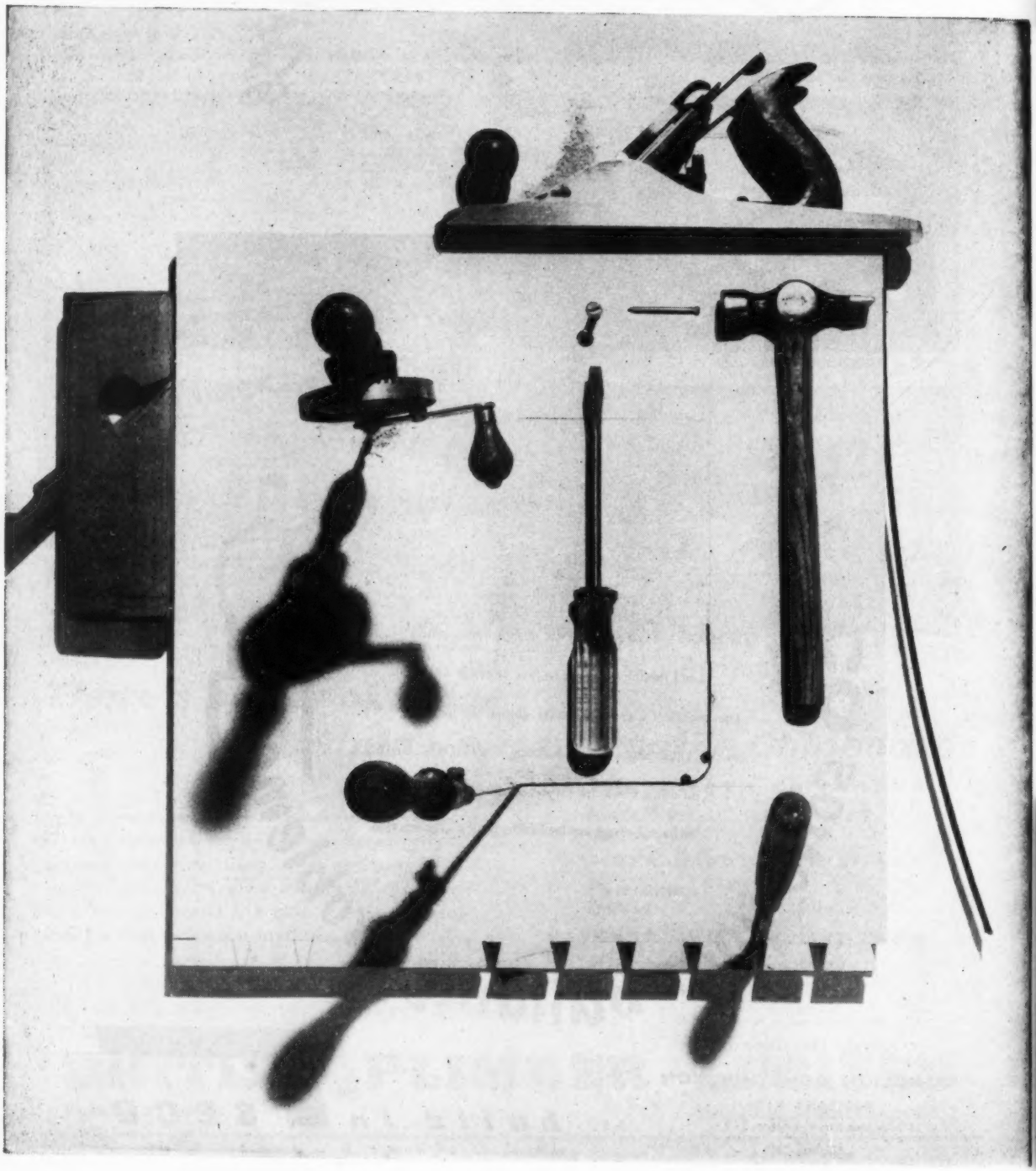
**SELECTION CONSTRUCTION COMPANY LTD.**

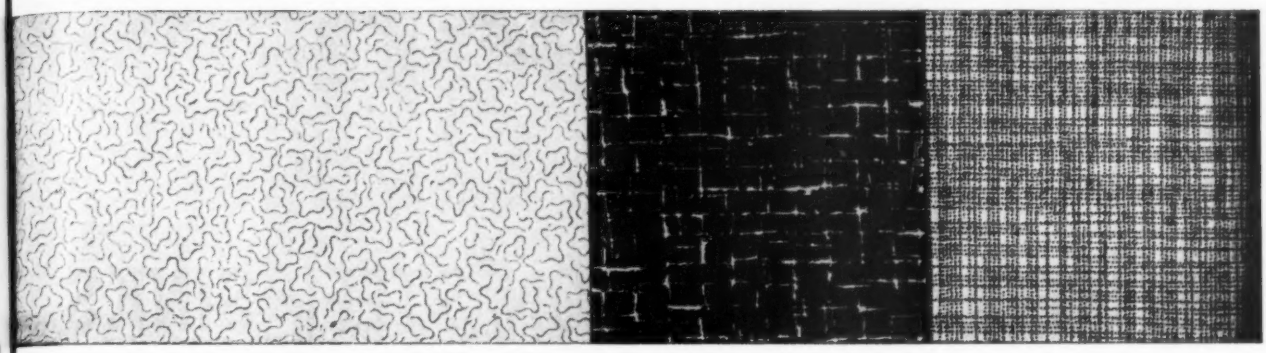
26 Margaret Street, London, W.1

LANgham 7931

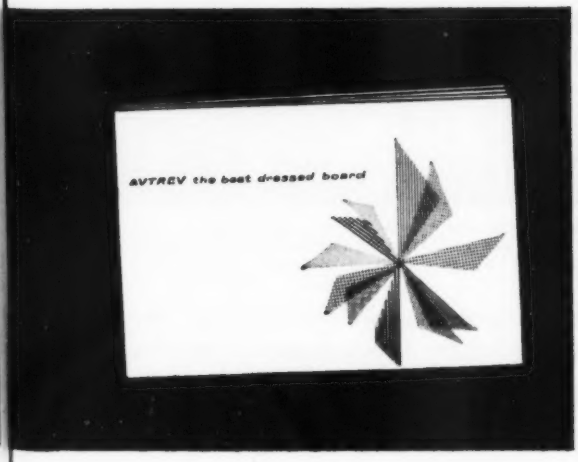
build in SECO

# Get to know Avtrev!





# Melamine faced chipboard Groove it, drill it, saw it, plane it, nail it, screw it! Get to know Avtrev now!




*Post this coupon today for the FREE, full colour brochure.*

LONDON SALES OFFICE · BARTREV BOARD COMPANY LIMITED
5 ST. JAMES'S PLACE · LONDON · SW1

*Please send me a free copy of the Avtrev brochure*

NAME.....

ADDRESS.....

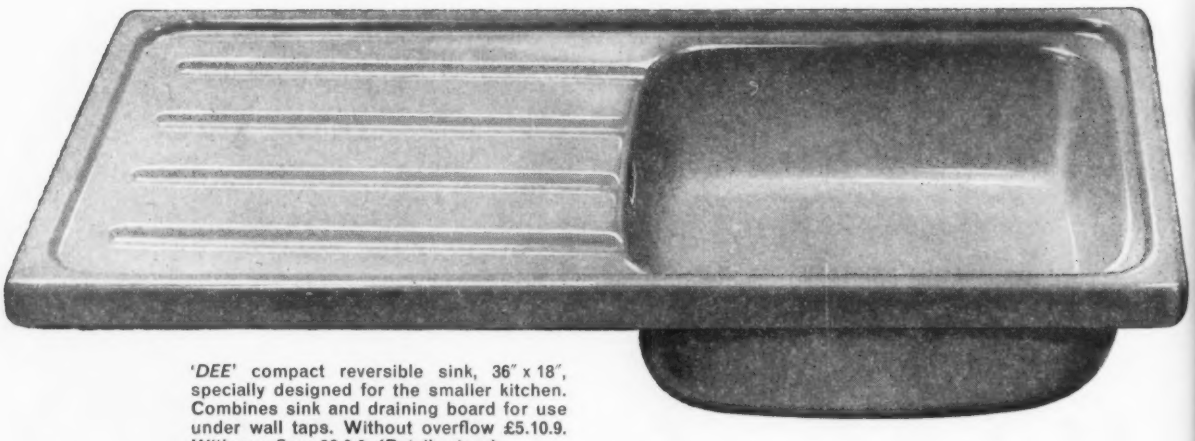
.....

(BLOCK CAPITALS, PLEASE)

A.J.6.

# curran

## VITREOUS ENAMEL ON STEEL SINKS



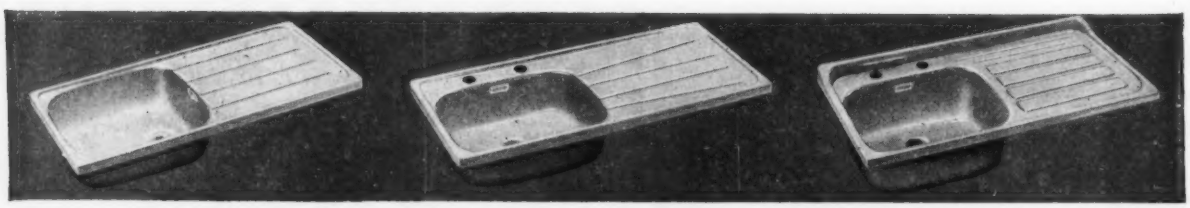
'*DEE*' compact reversible sink, 36″ x 18″, specially designed for the smaller kitchen. Combines sink and draining board for use under wall taps. Without overflow £5.10.9. With overflow £6.0.9. (Retail prices).

Made from top-grade British Standard steel which "takes" a superior quality enamel—acid and alkali resistant—hard to stain and easy to clean.

This gleaming hygienic finish is now available, throughout the range, in a choice of four colours—white, cream, pale green and pale blue.

Curran sinks are designed to give maximum bowl capacity within the minimum space, with correctly sloped draining board combined.

They fit ideally into most kitchen layouts and are easy to install. Every model is supplied with left- or right-hand bowl, with or without overflow fittings.



'*EXE*' standard length reversible, large bowl, for wall taps; 42″ x 18″. Without overflow £5.16.0. With overflow £6.6.0. (Retail prices).

'*WYE*' left- or right-hand bowl, with back shelf, for pillar taps; 42″ x 18″. Without overflow £6.3.6. With overflow £6.13.6. (Retail prices).

'*FORTH*' Full size model, left- or right-hand bowl, with splash back, for pillar taps; 42″ x 21″. Without overflow £7.2.6. With overflow £7.15.0. (Retail prices).

Curran 'know-how' with steel and enamel means sturdy quality, clean design and fine finish *at economy prices*. Write us for illustrated folder detailing the full range; also for details of Curran vitreous enamelled pressed steel BATHS.

A PRODUCT OF THE CURRAN ORGANIZATION

EDWARD CURRAN ENGINEERING LTD., SINKS AND BATHS DIVISION, CARDIFF. TELEPHONE: CARDIFF 33644

*installations of*

# SUNWAY

REGD.

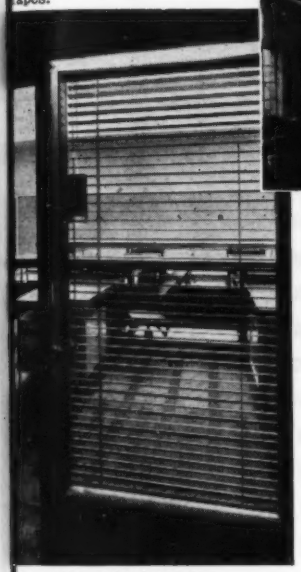
## VENETIAN BLINDS

- *Give full control of sunlight and eliminate glare*
- *Reflect artificial light, increasing volume by up to 25%*
- *Adjustable aluminium alloy slats give perfect ventilation and insulation*
- *Scientifically curved slats are flexible, unbreakable and easy to clean*
- *Stove enamelled finish in wide choice of attractive colours—will not chip or fade*
- *Negligible maintenance cost and long life*



Sunway Skylight Blinds fitted to glass roof of office.

Sunway Standard Blind fitted with invisible Terylene tapes.



Moons Motors Ltd designed by n-Smith & Partners.



Sunway Blinds with electrical control are A1 at Lloyds.

### SKYLIGHT BLINDS

Specially designed for horizontal and sloping roof lights and floating ceilings. They are a fixed, non-retractable installation with a variable slat adjustment and fitted with a versatile electrical hydraulic or mechanical remote control. (Runs up to 100 feet can be controlled from a single point). They can be instantly adjusted to changing light and heat conditions and eliminate cost of seasonal treating of roof lights.

### STANDARD BLINDS

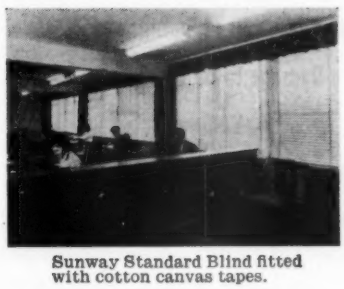
All blinds made to measure to fit any window from 18 inches to 12 feet wide and 2 to 15 feet in drop, with automatic cord lock for raising and lowering. Also available with two-tone slats and tapes, giving colour continuity to outside and choice of colour to individual rooms inside.

### TWO-WAY BLINDS

Can be raised from the sill or lowered from the top. Especially useful for drawing offices, schools and hospitals and municipal buildings.

### DIM-OUT BLINDS

—suitable for Cine or Slide showing.



Sunway Standard Blind fitted with cotton canvas tapes.



Sunway Skylight Blinds fitted to factory inclined roof light.

***Full details and colour charts contained in descriptive folder. Specimen slats and tapes (invisible Terylene, cotton canvas or plasticised) gladly sent on request.***

*Main Distributors and Fixers*

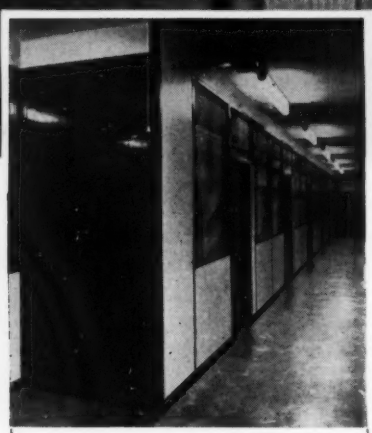
# HORSLEY, SMITH & HEWETSONS

HORSLEY SMITH & CO. LTD.
Hayes, Middlesex
Telephone Hayes 2931

hs GROUP

J. A. HEWETSON & CO. LTD.
Marfleet, Hull
Telephone 13880





**Complete Flexibility in Planning**

**Positively No Damage to Buildings**

**95% Recovery Value**

**Exceptional Insulation**

**Quality Materials in Every Kind of Finish**

## All-purpose efficiency with . . . SWIFTPLAN demountable PARTITIONS

. . . the partitioning service you've always wanted. The ultimate in flexibility—panels supplied in any width to suit your needs! But that is only one of the many reasons why the new SWIFTPLAN flush type partitioning will appeal to you as exactly what you've always wanted. Quality, for example—a quality, fit and finish such as you would expect only by having skilled craftsmen working specially for you on your premises. Site fixing, achieved by using spring loaded jacks where floors and ceilings are of solid construction, in all other cases floor and ceiling grounds are used. Quality finishes too—anything from painting to decorative veneers; suitable for any purpose, from the simplest accommodation to an executive suite. SWIFTPLAN offer you a complete partitioning service—design, construction, erection, alteration—to an entirely new standard of flexibility and efficiency. And at surprisingly reasonable cost.

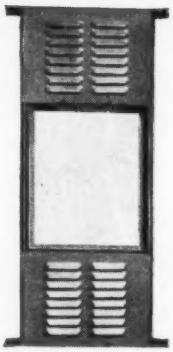
*Write now for full details*

**SWIFTPLAN** Regd. Trade Mark

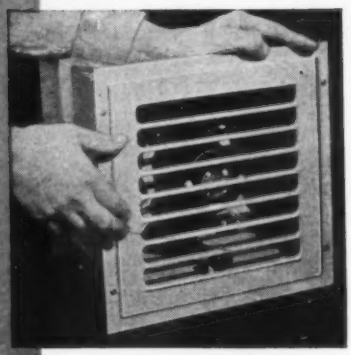
**39 VICTORIA STREET · LONDON · SW1 · TELEPHONE ABBey 4393**

# Powered & Natural VENTILATION BY GREENWOOD-AIRVAC

## *for houses and flats*







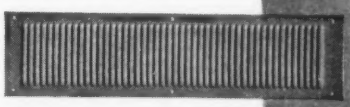
**'PERMAVENT' LARDER LIGHTS AND VENTI-LIGHTS**

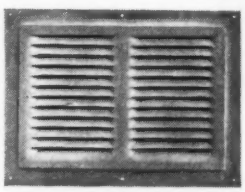
Fully weathered permanent ventilation and daylight. Built-in fly proof gauze. Multi-louvred panels. Suitable for pantries, sculleries, garages, stores, etc. Size range: Larder Lights 6¾″ x 18″ to 18″ x 30″; Venti-lights 9″ x 18″ to 18″ x 30″.

**'MECHAVENT 75' EXTRACTOR FANS**

A complete 7½″ wall-mounted fan unit, with safety grille, closing louvres and totally enclosed motor. Flush-fitting into 9″ x 9″ opening. Ideal for domestic kitchens, stores and drying cupboards.

**'MAXAIRE' MULTI-LOUVRED PANELS**





With specially designed multi-louvres. A wide range of sizes suitable for ductwork, grilles, heaters, cookers, air convectors and air conditioners.



**WALL VENTILATORS**

Suitable for permanent or controllable ventilation. Available in a comprehensive range of types and sizes for either external or internal fitting.

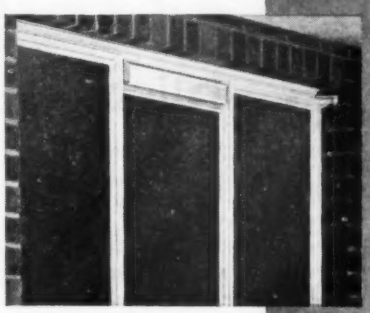


*(above)* Large free area embossed bar front movable louvre ventilator, type HML/B.

*(right)* Weatherlip heavy external fixed louvre ventilator, type 'L'.

**'PERMAVENT' WINDOW VENTILATORS**

Permanent or controllable ventilation with locked window security. Unobtrusive, lightweight and fully weathered. Minimum daylight restriction. For metal or timber windows.



*write for this new folder– to day!*

*"Ventilation for Houses and Flats" Free on request*



*All these Ventilators are fully patented.*

# Greenwood-Airvac ventilation

GREENWOOD'S AND AIRVAC VENTILATING COMPANY LTD

*ESTABLISHED* 1879.

PATENTEES, DESIGNERS AND MANUFACTURERS OF NATURAL AND MECHANICAL VENTILATING EQUIPMENT.

BEACON HOUSE, KINGSWAY, LONDON, W.C.2. CHANCERY 8135 (4 lines). 'Grams: 'AIRVAC', LONDON

GV 12

# A fine roofing job?

you should see ours!



## INDUSTRIAL ENGINEERING LTD

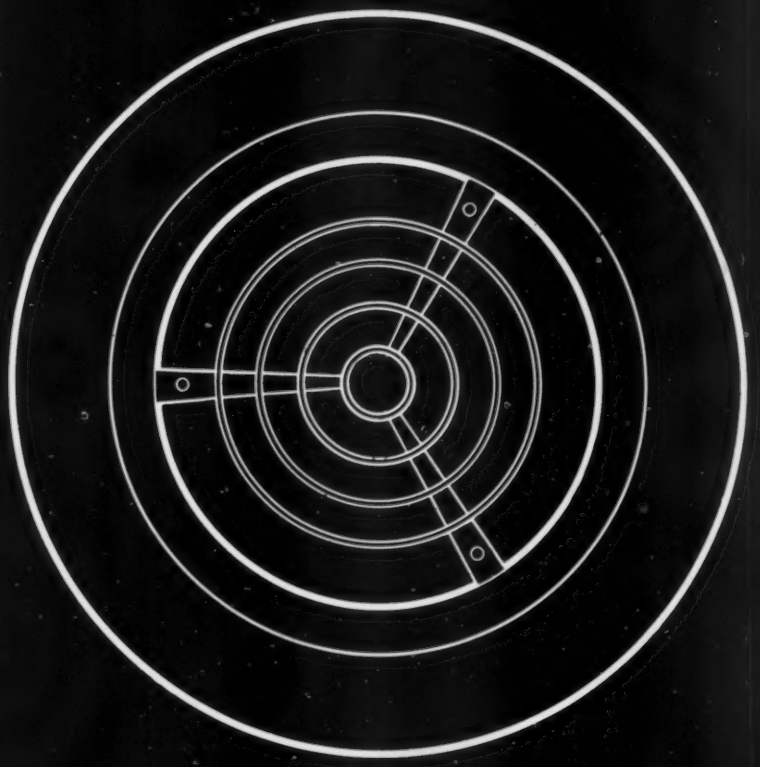
## The roof specialists

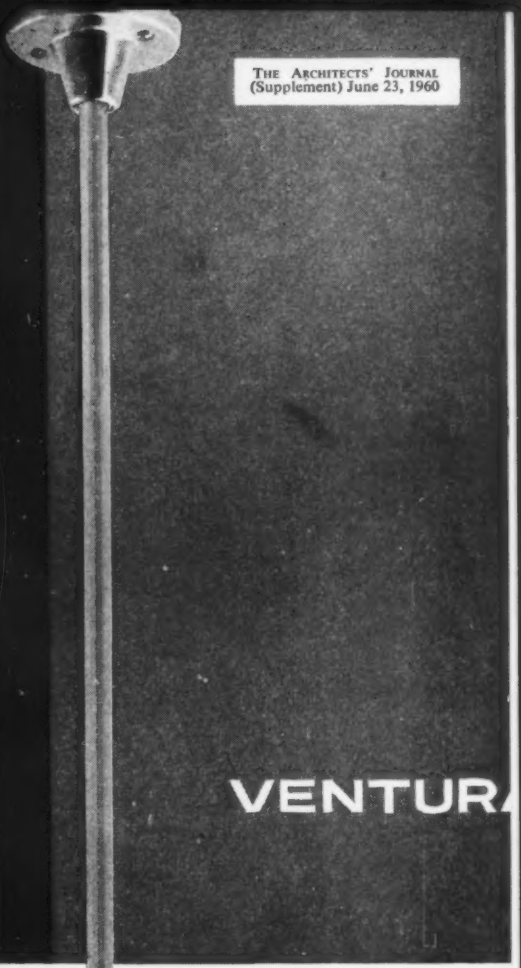
As specialists for over forty years in the construction, reconstruction, maintenance and waterproofing of industrial roofs, we are able to offer the architect a complete service designed to relieve him of every worry.

* The complete roofing contract can be placed with us, eliminating the need for dealing with several sub-contractors.
* A number of highly specialised technical departments are always at your disposal for consultation and advice.
* Complete surveys can be carried out and estimates submitted without cost or obligation.

Branch offices throughout the country.

INDUSTRIAL ENGINEERING LIMITED, VOGUE HOUSE, HANOVER SQUARE, LONDON W.1. HYDe PARK 1411 (7 LINES)





VENTURA

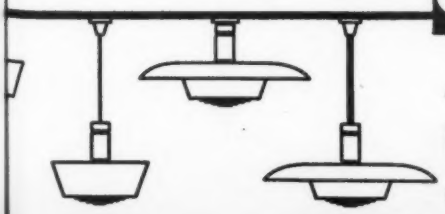
# logic

The Ventura series by Merchant Adventurers Limited provides architects and engineers with a range of twenty lighting fittings designed with logical simplicity to fulfil a variety of common lighting needs. They give general lighting with a high degree of diffusion and with no disturbing glare. Moulded in white opal translucent plastic, the diffuser has an open top for shadowless ceiling lighting. The open louvred aperture gives virtually uninterrupted downward lighting while shielding the bare lamp from all normal viewpoints.

Prices from 19/2d. including P.T.



MA



A comprehensive leaflet giving full data and prices is available on request.

## Merchant Adventurers Limited

Head Office: Hampton Road West, Feltham, Middlesex. FELtham 3686

London Showrooms: 43, Portland Road, London, W.11. PARk 1223



# Just how many feet* has your Man Friday got?

The footprints could belong to us. Or rather, our research team. You'll notice they cover quite a bit of ground. Anything, in fact, to do with bonding or sealing building materials has them cheerfully searching in all directions for the right answer. Whether you're looking for the right Curtain Wall Sealant, Gap Sealant, Contact Bonding Adhesive, or what-have-you, you're bound to find us pretty useful as your Man Friday.

*Write to Bostik Building Advisory Department, B.B. Chemical Co. Ltd., Leicester.*

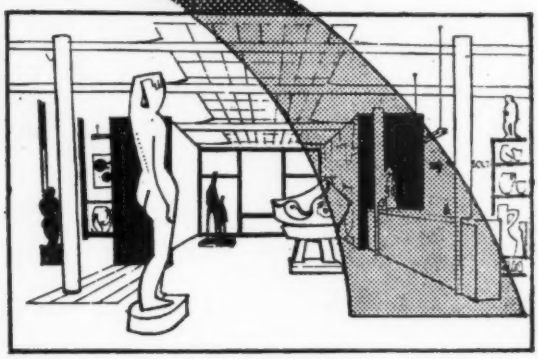
**Bostik**

ALWAYS ONE USEFUL STEP AHEAD



* In case it's some time since you last read the book of the film, you might like to be reminded: *Robinson Crusoe's Man Friday left one single, solitary footprint in the sand!* Defoe, bless him, never explained this one-footed mystery.

*The word* BOSTIK *is a trade mark registered in the United Kingdom and many other countries.*

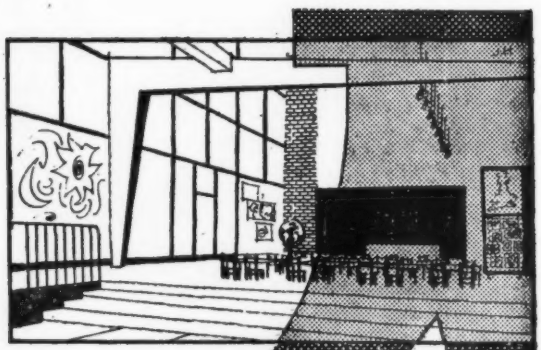


*it's new*

*a truly*

**FLAT**

*finish*





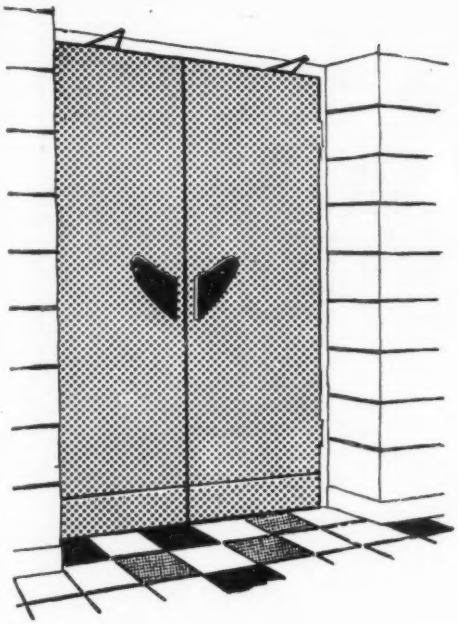

**GAYMEL FLAT FINISH**

Imagine a coating of softly luminous colour, as evenly matt as sprayed distemper, yet more durable than the most solid flat oil finish. This is the paint Gay's set out to formulate many years ago, and now present as GAYMEL FLAT ENAMEL. The quality of decoration attained with this finish is superb, and so is the speed and certainty with which faultless results are obtained —every time.

- DRIES PERFECTLY MATT
- EASILY APPLIED
- EASY TO JOIN UP FLANKS
- EXCELLENT FLOW
- HIGH OPACITY
- NO SPECIAL UNDERCOATING REQUIRED
- QUICK DRYING
- WITHSTANDS CONSTANT WASHING WITHOUT DAMAGE AND WITHOUT POLISHING
- AVAILABLE IN 36 COLOURS FROM GAY'S ARCHITECT'S RANGE

Write for full information and shade cards to

**R. GAY & CO.** *93/97 New Cavendish Street, London, W.1*

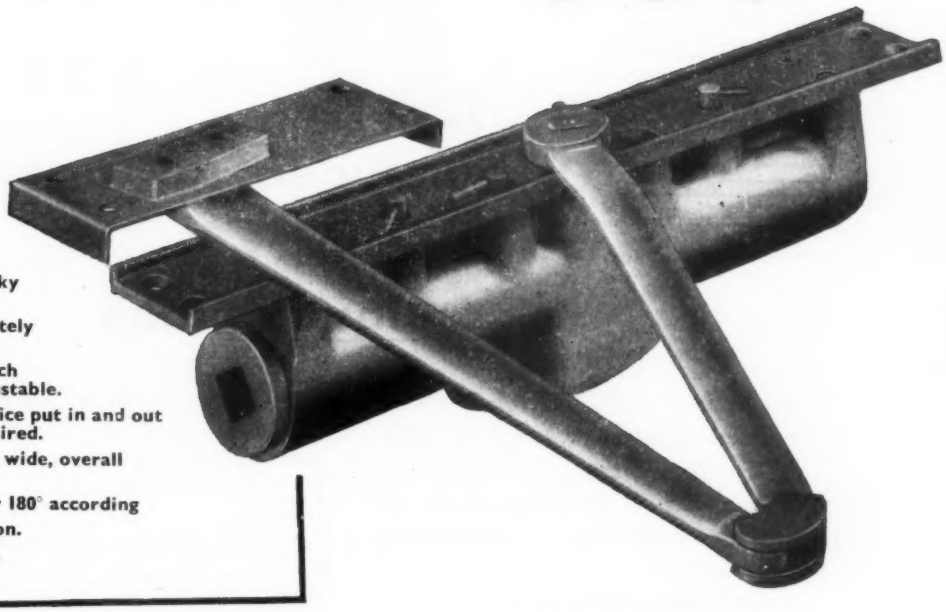


# Only the SLIM arms can be seen

The "BRITON 500" is a door closer designed for use when the appearance of the door and surroundings are of first consideration. With nothing visible except the slim arms, which are styled to be as streamline and unobtrusive as possible, it achieves complete concealment without loss of power or door control. The "BRITON 500" is suitable for internal single-action doors not exceeding 7′ by 3′ in size, and 112 lbs. in weight.

## THE BRITON 500

*Concealed Door Closer*

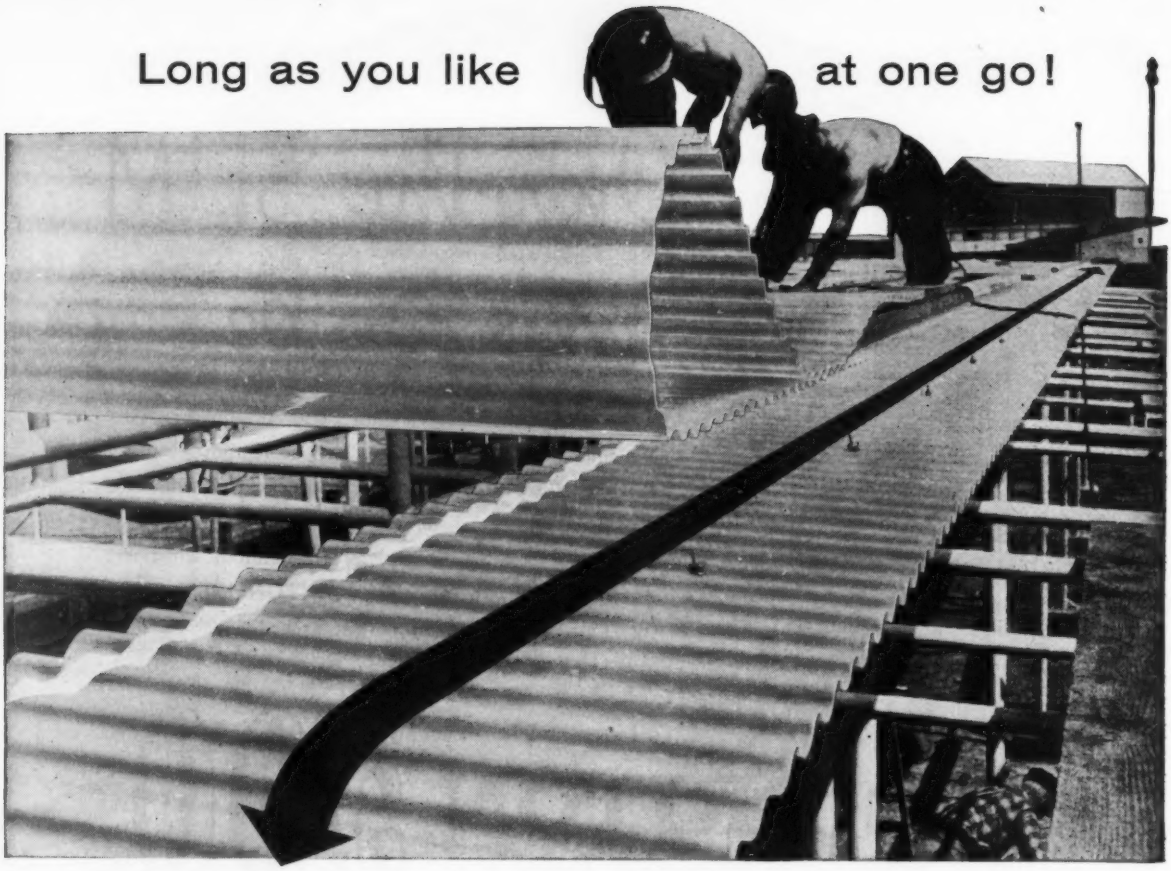


- ★ Smooth and silky check-action.
- ★ Bounce completely eliminated.
- ★ Closing and latch speed fully adjustable.
- ★ Stand open device put in and out of action as desired.
- ★ Body only 1⅜in. wide, overall lengh 13in.
- ★ Opens to 90° or 180° according to fixing position.
- ★ No oil leakage.

*See our exhibits at the building Centre, 26 Store Street, London, W.C.1.*

**William Newman & Sons Ltd.** HOSPITAL STREET, BIRMINGHAM, 19.

Long as you like at one go!



ContiROL

translucent corrugated sheeting in continuous rolls

An entirely new departure—continuous corrugated translucent sheeting 6½ ft. wide and in 30-yard lengths, or longer—as long as you can handle. It saves work in fixing, needs less support and is stronger, weight for weight, than other materials.

Contirol is made from polyester resin reinforced with glass fibre, strong, shatterproof, resistant to weathering—ideal for roof lights, canopies, walls and shelters.

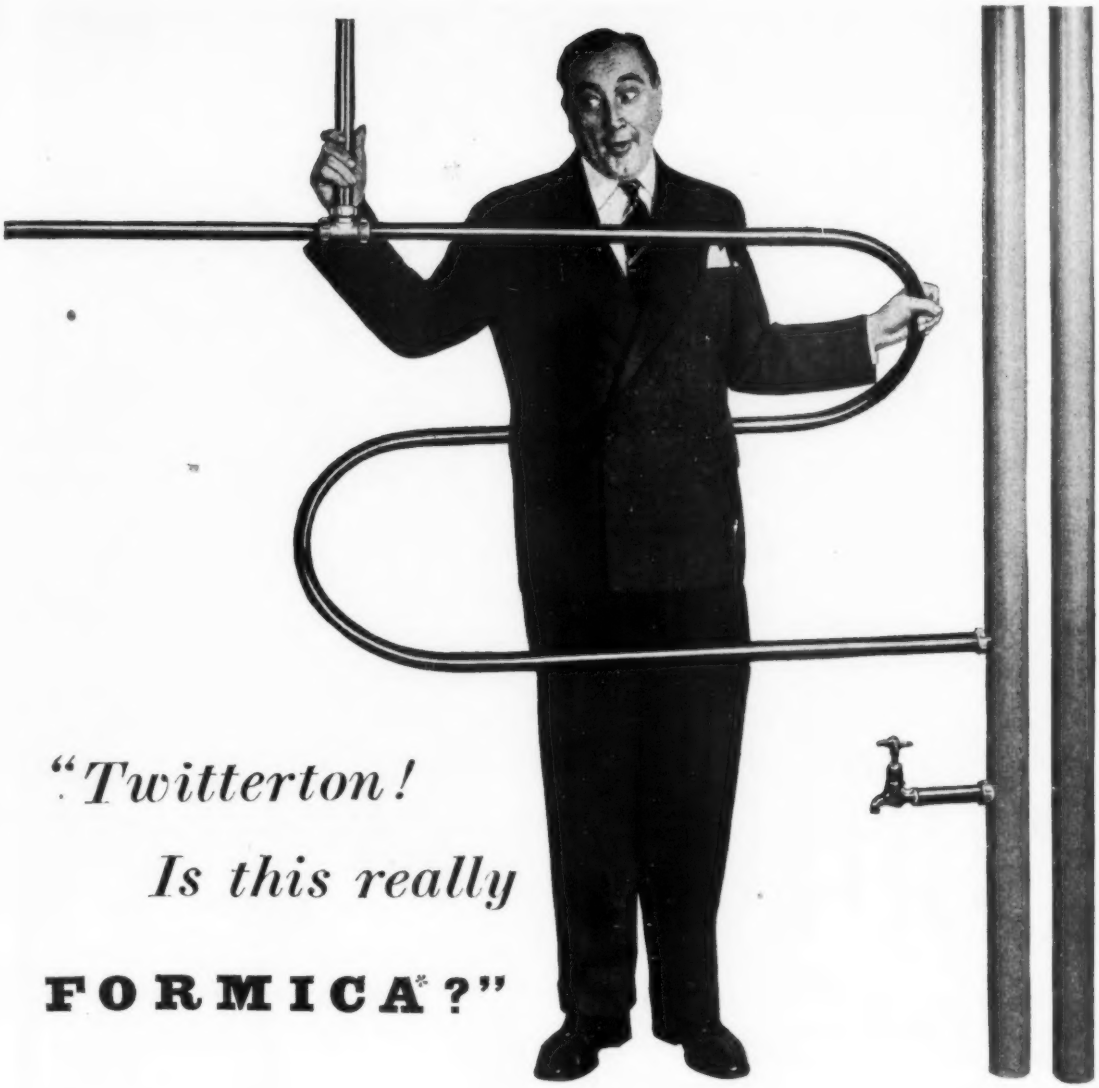
Contirol is available in a wide range of attractive light-fast colours, translucent and opaque.

*Write today for illustrated leaflet and full details of this translucent sheeting in brand new form to*

**JOSEPH WEIL and SON LIMITED**

Friars House, 39-41 New Broad Street, London E.C.2. Phone: London Wall 5052

1/3791



*"Twitterton!*

*Is this really*

**FORMICA*?"**

Yes, this is Formica plastics piping. Time was, when the name Formica made one think of surfacing materials. Nowadays the best informed people know that Formica Limited make all sorts of things: of which plastics piping is just one. Formica piping has overcome every major disadvantage of metal. It is non-toxic, resistant to corrosion and frost damage, indifferent to old age, extremely light and easy to handle.

Closely related to piping are Formica plastics containers for toothbrushes and cosmetics, and Formica extruded rod for shock-proof screwdriver handles. *So many things come from Formica today!*

**FORMICA make**

INDUSTRIAL LAMINATES
**EXTRUDED PLASTICS**
DECORATIVE LAMINATES
CHAIR SETS

*For full information on any FORMICA product please write to:*

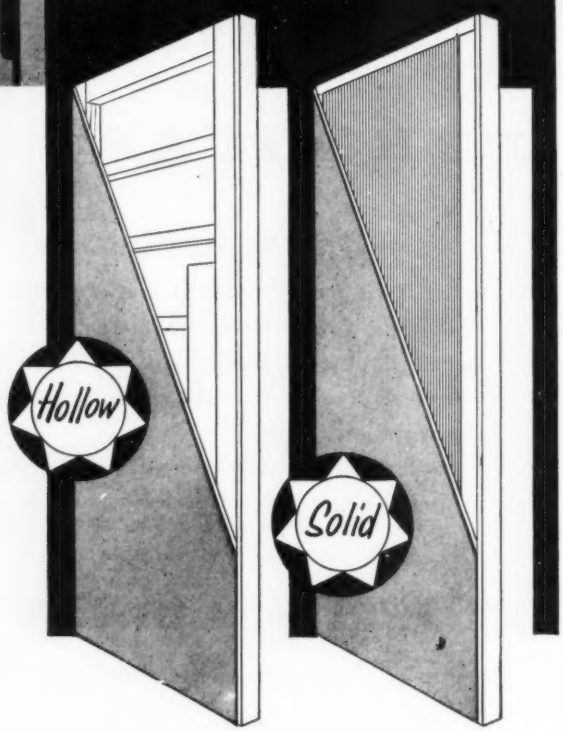
**FORMICA LIMITED, Extruded Plastics Division, Cavendish Works, Buckhold Road, Wandsworth, S.W.18. Tel: VANdyke 7202**

*FORMICA *is a registered trade mark*

medium price flush doors by Venesta

# Gold Star

Venesta's new 'Gold Star' now bring you solid and hollow-core flush doors in a medium price range, but there is nothing medium about the superb Venesta workmanship. The frame and intermediate rails of the hollow door are carefully shaped not to show through even when the plywood face is highly polished. The core of the solid 'Gold Star' is of seasoned block core kerfed both sides to prevent warping. Send for folder (L5) with all details and prices.




* Non-warp construction by craftsmen using the pick of kiln-dried deal and 5 mm African Mahogany plywood.
* Bonded throughout with synthetic resin. Stile edges lipped with kiln-dried hardwoods tongued to frame.
* Covered by a 5 year guarantee regardless of any maintenance clause there may be in the Building Contract. Should a Venesta door develop any fault due to bad manufacture within 5 years, an entirely new door will be supplied ready for hanging and finishing.
* Built by Venesta, the first name in flush doors.

**VENESTA PLYWOOD LIMITED**

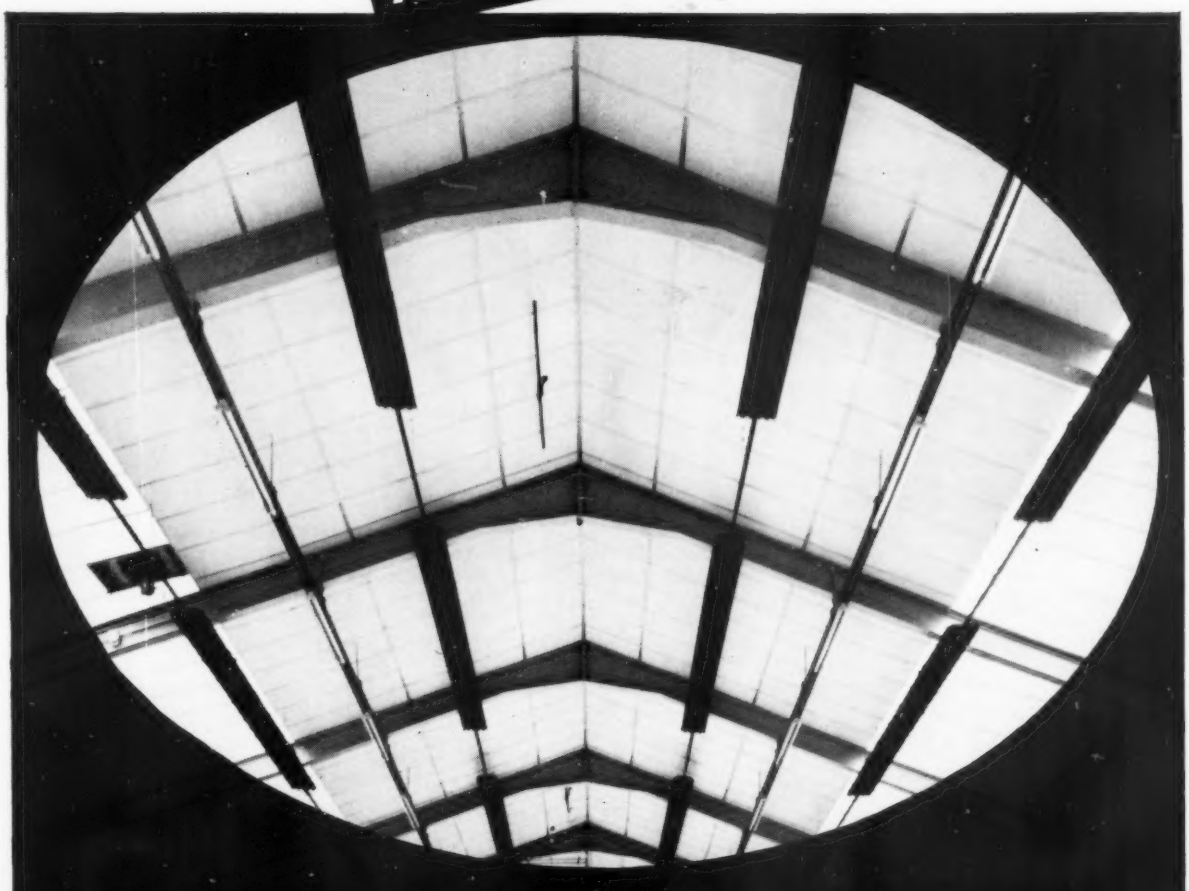
VINTRY HOUSE, QUEEN STREET PLACE, LONDON EC4 TEL: CENTRAL 3040 (24 LINES)

YA2189

NEW

# Colourful, gleaming, washable ceilings

AT LOW COST



PLASTIC-FACED PLASTERBOARD

In five B.S.S. colours and white, Paramount Plastic-faced Insulating Plasterboard is the obvious choice for suspended and under-purlin ceiling linings in new or existing buildings. Bright, easily cleaned plastic surface gives maximum light-reflection. High fire resistance plus Class I Spread of Flame Certificate, high thermal qualities, durability, speed and simplicity of erection and low cost are some of the many advantages.

*Write for full details*

**THE BRITISH PLASTER BOARD** (Manufacturing) **LTD.**

Ferguson House, 15-17 Marylebone Road, London, N.W.1 Telephone: HUNter 4021

BLUE HAWK PRODUCTS

*AP 210*



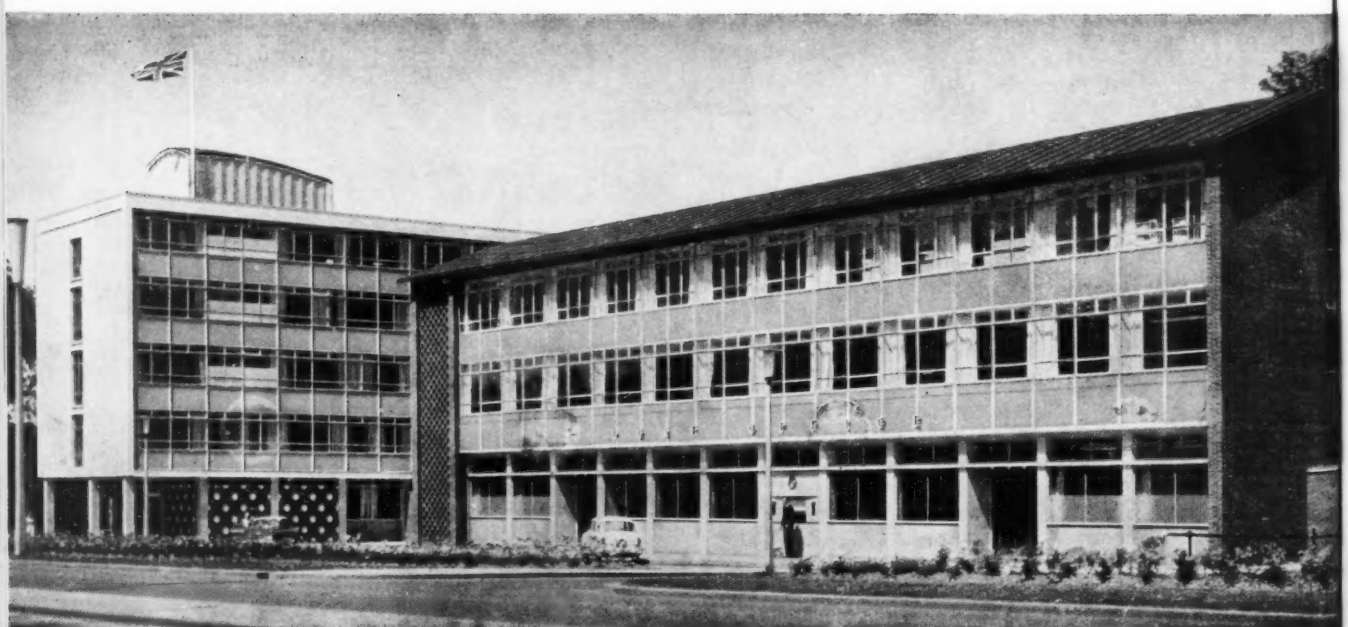
# Protection for buildings

## in choice of colours, patterns and textures

Pilkingtons' Cladding Glasses—"Armourclad", "Muroglass" and "Vitrolite"—are available in a wide range of attractive colours. These glasses provide municipal and industrial buildings of all types with permanent protection in many variations of colour, pattern and texture. For further details, including glazing recommendations, write to the Technical Sales and Service Department. Supplies are available through the usual trade channels.

▲ *Turquoise "Muroglass" spandrel cladding for Sunbeam Electric Ltd., factory at Nerston, East Kilbride. By courtesy of Scottish Industrial Estates Ltd., proprietors of the building. Architects: Wylie, Shanks & Underwood, Glasgow.*

▼ *Daffodil "Muroglass" for spandrels totalling 3,500 sq. ft. approx. at Crown Building and Head Post Office, Crawley New Town. Designed by the Chief Architect's Department of the Ministry of Works.*



**PILKINGTON BROTHERS LIMITED**

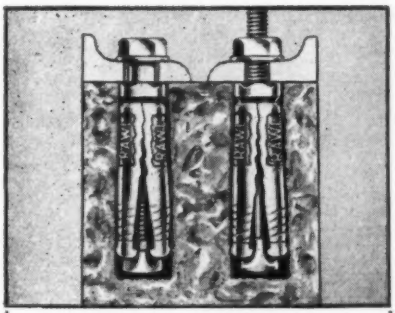
ST. HELENS · LANCASHIRE · TEL: ST. HELENS 4001

SELWYN HOUSE, CLEVELAND ROW, ST. JAMES'S, LONDON, S.W.1 (TEL: WHITEHALL 5672-6)

*"ARMOURCLAD" and "VITROLITE" are registered trade marks of Pilkington Brothers Limited*

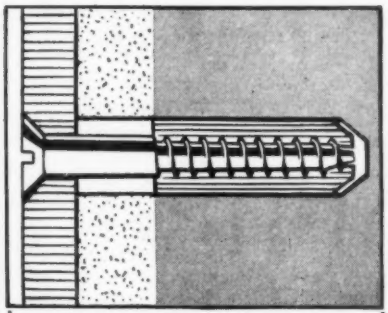
# SOLVE YOUR FIXING PROBLEM WITH ONE OF THE 21

However tough or awkward the material into which you want to fix, or difficult the problem, there will be among the 21 TYPES OF RAWLPLUG FIXING DEVICES, the right answer. Speed and simplicity of application, reliability and complete security, coupled with the RIGHT solution to a problem, are the foundations of the RAWLPLUG FIXING TECHNIQUES.
A comprehensive catalogue showing these fixings in detail, together with their application, will gladly be forwarded to you on request.



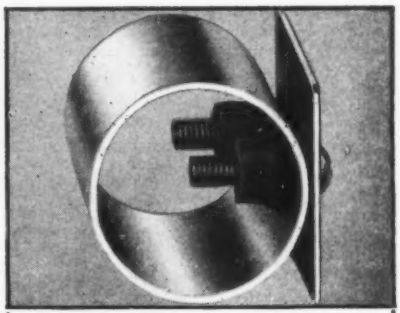
## BOLT FIXINGS

With **RAWLBOLTS** a bolt fixing job is done in minutes, as against days by earlier methods. Simply drill the hole, drop in the **RAWLBOLT**, put into place the unit to be held, tighten up and the **RAWLBOLT** is ready to take the maximum load that the bolt, or the material into which it is fixed, will stand.
For extremely wet or corrosive locations, use Rawlplug Caulking **BOLT ANCHORS**; for securing metal threads in masonry—**RAWLTAMPS**. Where fixing points can be predetermined before pouring concrete, use **CEMENT-IN SOCKETS**, thus obviating the need for hole-boring.



## SCREW FIXINGS

For making neat, absolutely firm screw fixings in masonry, indoors or out, the famous **RAWLPLUG** is still vastly quicker and more efficient than any alternative method. Rawlplugs are waterproof and quite unaffected by climatic conditions. They are available for all screw sizes up to ¾" diameter Coach Screws.
For fixings that are to be subjected to high temperatures, or in under-water conditions, use **WHITE BRONZE PLUGS** with stainless steel or cadmium plated steel screws. For fixings subject to corrosive fumes or liquids, use Rawlplug **LEAD SCREW ANCHORS** with stainless steel screws.



## CAVITY FIXINGS

The **RAWLNUT**—an ingenious device for fixing into any hollow materials. Inserted and fixed from the outside, it forms its own anchorage within the cavity; and provides a vibration-proof, watertight and **AIRTIGHT** fixing. In addition a type can be supplied to give adequate protection to the screw **IN THE CAVITY**.
**SPRING TOGGLES** make firm fixings in thin and structurally weak materials such as plasterboard, ceilings, etc. The wings of the device spring apart behind the material and spread the load. **GRAVITY TOGGLES**, for use in hollow wall materials, position their toggles by the action of gravity.

## THERE ARE 21 DIFFERENT TYPES OF

RAWLPLUG WALL PLUGS

# FIXING DEVICES

**and an all-inclusive range of high performance hole-boring tools, hand or power.**

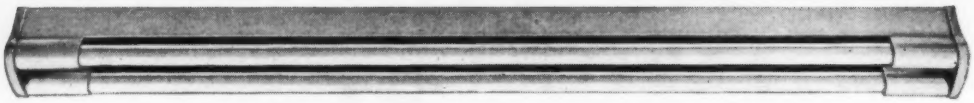
8667

**THE RAWLPLUG COMPANY LIMITED • CROMWELL ROAD • LONDON, S.W.7**

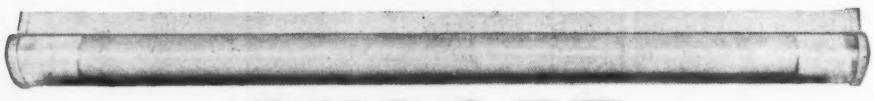
# FLUORESCENT



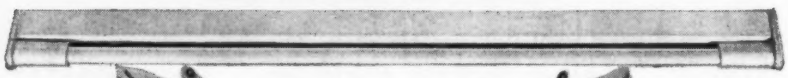
# FITTINGS THAT

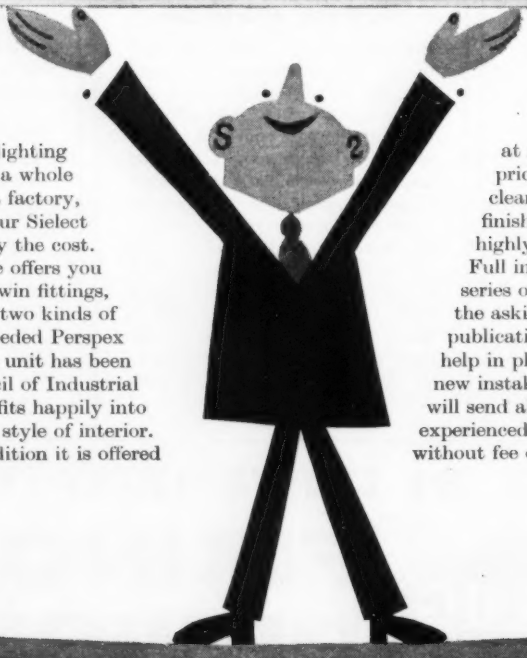


# FIT YOUR



# BUDGET

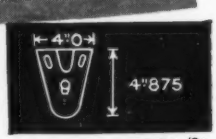




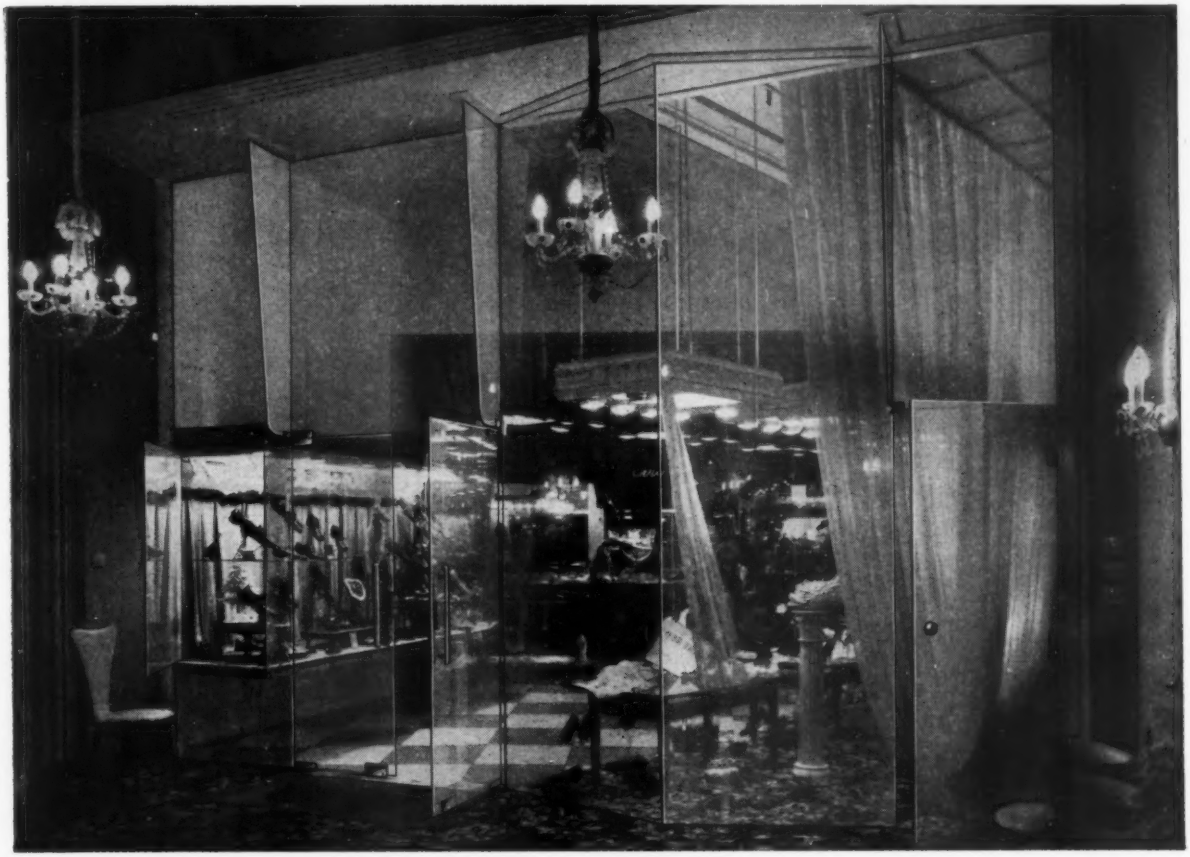

Whether you are choosing lighting fittings for a single room or a whole building, an office block or a factory, send for the facts about our Sielect range—particularly the cost. Briefly, the Sielect range offers you a choice of single or twin fittings, with open tubes, two kinds of reflector, or with reeded Perspex diffusers. The basic unit has been approved by the Council of Industrial Design and the range fits happily into any type or style of interior. In addition it is offered at an extremely attractive price. Finally, it is easy to service and clean, while the special epoxy resin finish is extremely tough and highly resistant to chemical attack. Full information about the entire series of Sielect fittings is yours for the asking in the Siemens Ediswan publication, PD11/F33. If you want help in planning or estimating for a new installation, let us know and we will send along one of our staff of experienced lighting engineers without fee or obligation.




**Associated Electrical Industries Ltd**
Radio and Electronic Components Division
Lamps and Lighting Department
38/39 Upper Thames St., London, E.C.4. Tel: CENtral 2332




CRC 11/83



Fashion Shoe Shop for T. Elliott & Sons Ltd., Caltex House, Brompton Road, S.W.3

Designed and installed by W. T. Booth Ltd.

# *GLASS becomes more versatile*

The Clark-Eaton

**"BLACKFRIARS" SYSTEM OF ALL-GLASS CONSTRUCTION**

provides unlimited opportunities and freedom of expression for the designer. Equally suitable for Shopfront Entrances and Surrounds, all types of Doors, including sliding and folding doors, or for COMPLETE FACADES of any size.

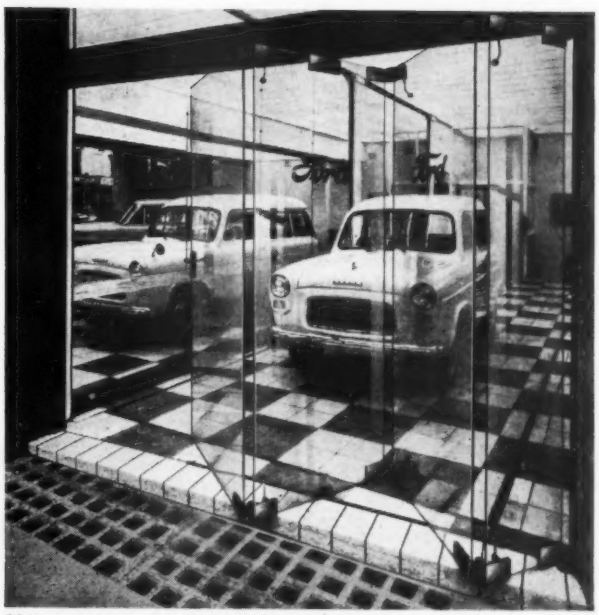
Full technical service is available.

CLARK FOR GLASS

**JAMES CLARK & EATON LTD**

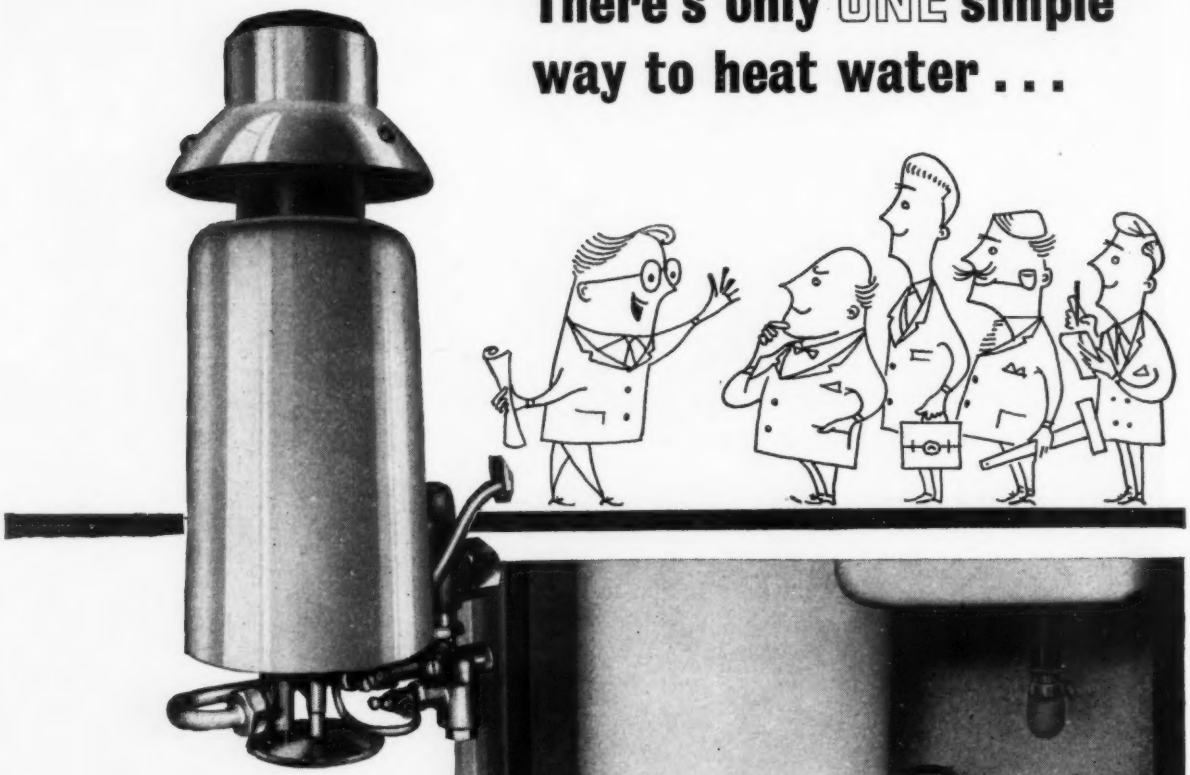
SCORESBY HOUSE, GLASSHILL ST., BLACKFRIARS LONDON, S.E.1 Telephone: WATerloo 8010 (20 lines)

Branches: Canterbury · Bournemouth · Eastbourne · Reading Oxford (H. Hunter & Co.)



Motor-car showroom entrance for H. & J. Quick Ltd., Deansgate, Manchester. Designed and constructed by Harris & Sheldon Ltd.

# There's only ONE simple way to heat water . . .



## NEW WORLD
# CIRCULYN
## GAS WATER HEATERS

Architects and Municipal authorities interested in dwellings, modernisation and conversion are using more and more gas water heaters with storage systems.

As an example the **NEW WORLD** C.12LF. Circulator fitted to a 20 gallon cylinder, under the draining board or other convenient position, is normally adequate for an average household of up to four persons.

Other sized **NEW WORLD** Circulators are available when hot water requirements are in excess of that provided by the C.12LF. All are reasonably priced, economical in use and easily fitted.

In older properties existing gas and water services are usually adequate and do not need replacement. Design is such that the minimum of maintenance is required over a long period of usage.

**NEW WORLD** Water Heaters also can be used as an auxiliary to a solid fuel system for intermittent use.

**Some 35 County, Borough, Urban and Rural Councils are using the C.12LF./20 gallon cylinder Under Draining Board unit including: L.C.C., Willesden, Ilford, Camberwell, Battersea, Coventry, Lambeth, West Ham, Enfield, Edinburgh, Preston, Romsey, Liverpool.**

**Fit** NEW WORLD PRODUCT OF Radiation Ltd **gas water heaters and forget your problems**

RADIATION GROUP SALES LTD, 255 NORTH CIRCULAR ROAD, LONDON, N.W.10. WILlesden 1234



# Effective insulation is a question of balance

STYROCELL is a rigid, lightweight material consisting of a profusion of non-communicating air cells encased in polystyrene. By maintaining a fine balance between its weight and the volume of trapped air, STYROCELL provides a barrier of virtually still air — the ideal thermal insulant. In addition to its light weight — 1 lb. per cubic foot — STYROCELL is inert and rot-proof. It possesses a low water-vapour permeability, with good mechanical strength, chemical resistance and electrical properties. Available in either standard or self-extinguishing grades — in thicknesses from ½"-10" — STYROCELL is used as an insulation material for mobile and static cold stores, factories, schools, office blocks, hotels and private houses and can be applied to roofs, walls and floors. Easy to handle and to work, STYROCELL is an inexpensive material that gives new meaning to effective thermal insulation.

# STYROCELL

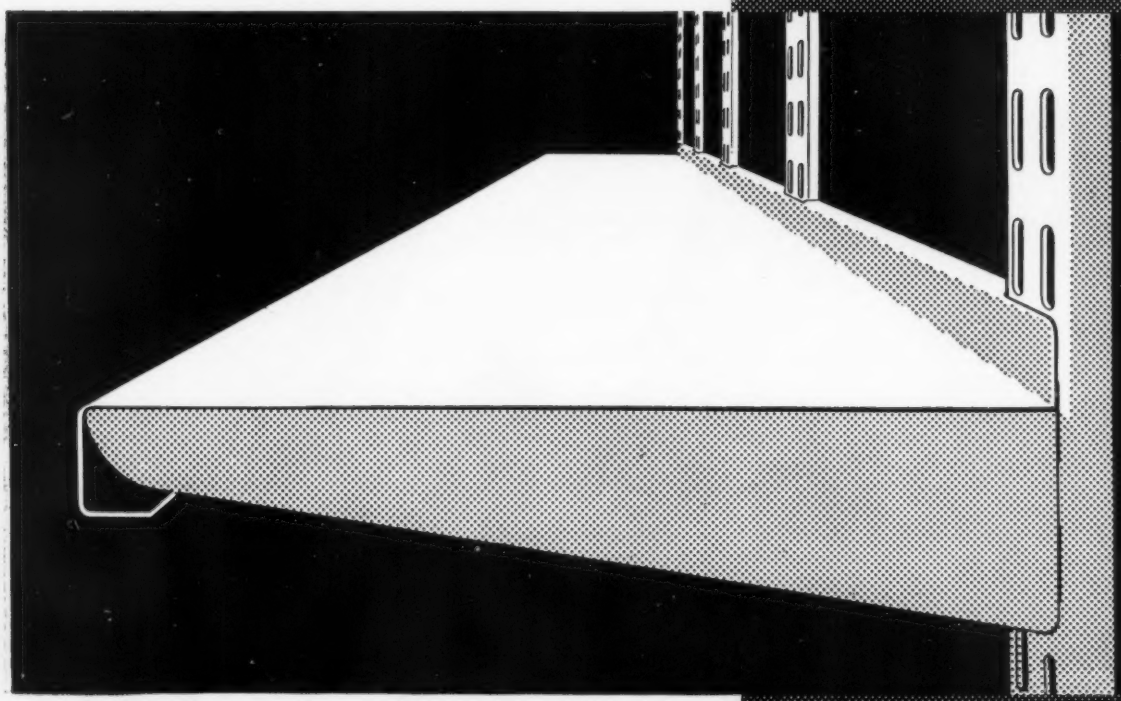
Further details may be obtained from
SHELL CHEMICAL COMPANY LIMITED, 170 PICCADILLY, LONDON, W.1.
or from Marley Tile Company Limited, Sevenoaks, Kent, who are distributors of 'Styrocell' board (under the name 'Marleycel') to the building industry

SB/1A

*'SHELL' and 'STYROCELL' are registered trade marks*

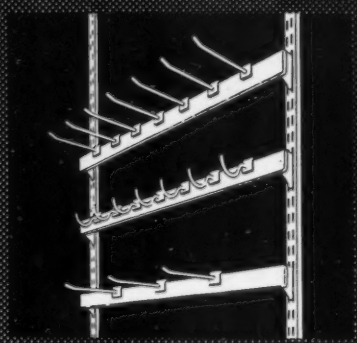
# *These New fittings mean*

## GREATER ADAPTABILITY... MORE APPLICATIONS FOR SPUR



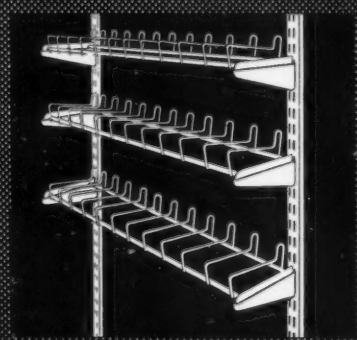
## New SPUR metal shelves

Designed to clip in to standard SPUR brackets, these new shelves are excellent for display use. Neat, attractive with no projecting edges, they can be quickly mounted, without the use of tools, and easily removed for adjustment to new shelf heights. Available in durable Willow Grey colour finish. Sizes 24 in. x 7 in., 24 in. x 10½ in., 36 in. x 7 in., and 36 in. x 10½ in. For glass shelves a special adaptor clip can secure the glass shelf onto the standard SPUR bracket.



### NEW SPUR ADJUSTABLE HOOKS

For shops, stores, cloakrooms, schools—wherever hanging accommodation must be provided simply and economically. Hooks clip on to special cross-bar units and can be quickly re-adjusted to meet changing needs. Two patterns available (as shown). Willow Grey colour finish. Cross bars in 2-ft and 3-ft lengths.



### NEW SPUR BOTTLE RACKS

For shops, cellars, warehouses and the home. Attractive enough for window and shop displays! Light, strong, rigid. Available in attractive, durable Terra Cotta colour finish. Racks (24 in. x 10½ in.) accommodate 6 bottles and clip in to standard SPUR units.

**SPUR** *simplest, most attractive adjustable shelving*

SAVAGE AND PARSONS LIMITED · WATFORD · HERTFORDSHIRE · WATFORD 26071

*. . . and now*

# Metered warm air

**FOR MULTIPLE HOUSING**

Weatherfoil Metered Heat provides the best of all worlds for municipal housing. The Weatherfoil system of forced warm air heating provides greater comfort for tenants yet installation and running costs are both exceptionally low. The tenant sets his own thermostat and pays by meter for heat consumed.
The really dramatic economies of Weatherfoil Metered Heat are obtained, however, when dwellings are planned right from the start to exploit the unique advantages of the system.

**WARM AIR CENTRAL HEATING**
**with . . .**

- **Low cost installation.**
- **Economical running.**
- **Temperature and on/off control in each dwelling.**
- **Tenant pays by meter.**



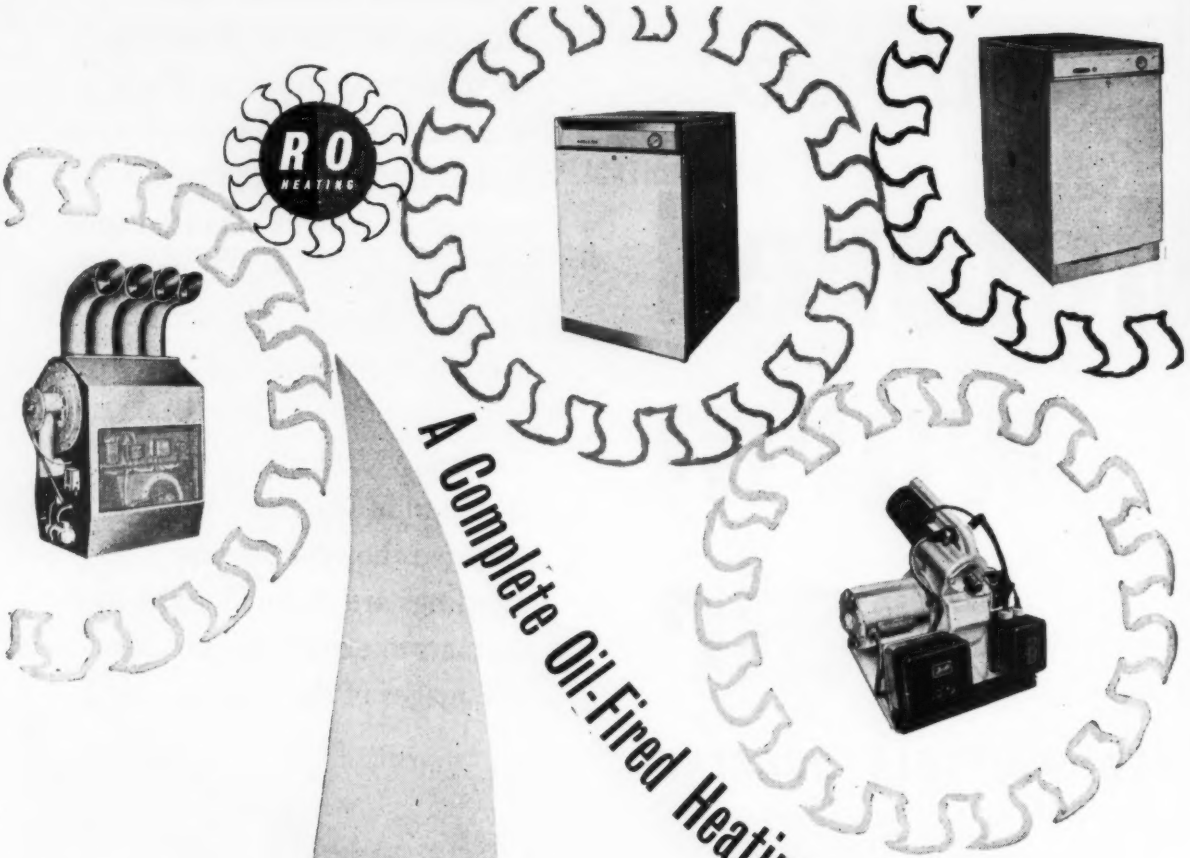
15 STOREY MAISONETTES, SCEAUX GARDENS, CAMBERWELL (Photograph by Sam Lambert).
F. O. Hayes, A.R.I.B.A., Borough Architect. H. C. Connell, A.R.I.B.A., Deputy Borough Architect.
A. W. Butler, A.R.I.B.A., Senior Architect. H. P. Trenton, A.R.I.B.A., Architect in Charge.

**WEATHERFOIL Metered Heat**

*Write for brochure to:*

**WEATHERFOIL LTD.,** *Head Office:* 185 Bath Road, Slough, Buckinghamshire. *Phone:* **Slough 25561**

81 OADGATE HOUSE, COVENTRY, WARWICKSHIRE. Phone: Coventry 40110.




# A Complete Oil-Fired Heating Service

Rubery Owen oil-firing equipment covers the whole range of industrial and domestic central heating requirements, and whatever the installation the outstanding features are efficiency, ease of operation, and economy.

The Rubery Owen-Greaves space heating system utilises ducted warm air and is easily adaptable to all types of heating installations and has outputs ranging from 60,000 to 1,750,000 B.Th.U. for industrial and commercial installations. For domestic and industrial heating systems the R.O. Patent Atomisation gas-oil burners with outputs of from 60,000 to 450,000 B.Th.U. and the Easifire No. 1 Pressure Jet Burner which is fully automatic, and by reason of the high degree of atomisation is most economical in use. These units operate on 35 secs viscosity Redwood No. 1 Fuel.

Domestic Central Heating and hot water supply are fully catered for by the Easifire 'OO' Oil Fired boiler which has an output of 30,000 B.Th.Us. Two new models—the Easifire E 80 and the Easifire E 100 are now available for larger domestic central heating installations, offices, shops, etc.: with outputs of 85,000 and 110,000 B.T.U. respectively they are of welded steel construction and incorporate a revolutionary design feature in that a hot water storage tank or calorifier for the domestic supply are not required.

The Burner is a new design of pressure jet with fully automatic electronic control box and photocell controls and boiler thermostat. Fuel is Gas-Oil 35 secs. The attractive casing, in enamel finish, has a catseye indicator and dial thermometer.

*Fully descriptive leaflets are obtainable on all these models. Please write for copies of those in which you are interested.*

## RUBERY OWEN (HEATING) LIMITED

**CHURCH STREET · WEDNESBURY · STAFFS · TEL: WEDNESBURY 1081-2**

*Member of the Owen Organisation*



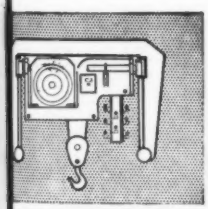
Manufactured under licence from Ferrand & Frantz Ing. Villeurbanne. British Patent No. 705, 14

## MODERN FACTORIES NEED

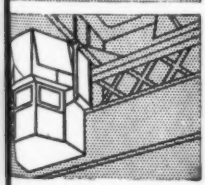
# RÉEL ABOVE ALL ELSE

## TO SAVE SPACE AND GIVE INCREASED HEIGHT OF LIFT

*-with reduced building costs!*



The underslung crab unit allows a highest hook position approaching close to the building height.



The driver's cage, glazed or open, is arranged to give maximum possible visibility in all directions.

Réel is the only modern overhead crane specially created to meet modern industrial demands for higher mobility and efficiency. The unique Réel design carries the crane to within inches of the roof, giving maximum height for lifting. Enclosed girder construction combines lightness with great strength, allowing more economical running and maintenance. There are capacities to suit all requirements. Handling of goods is faster, safer and more economical with Réel—why not contact us now for full information.

THE BRITISH

## "RÉEL"

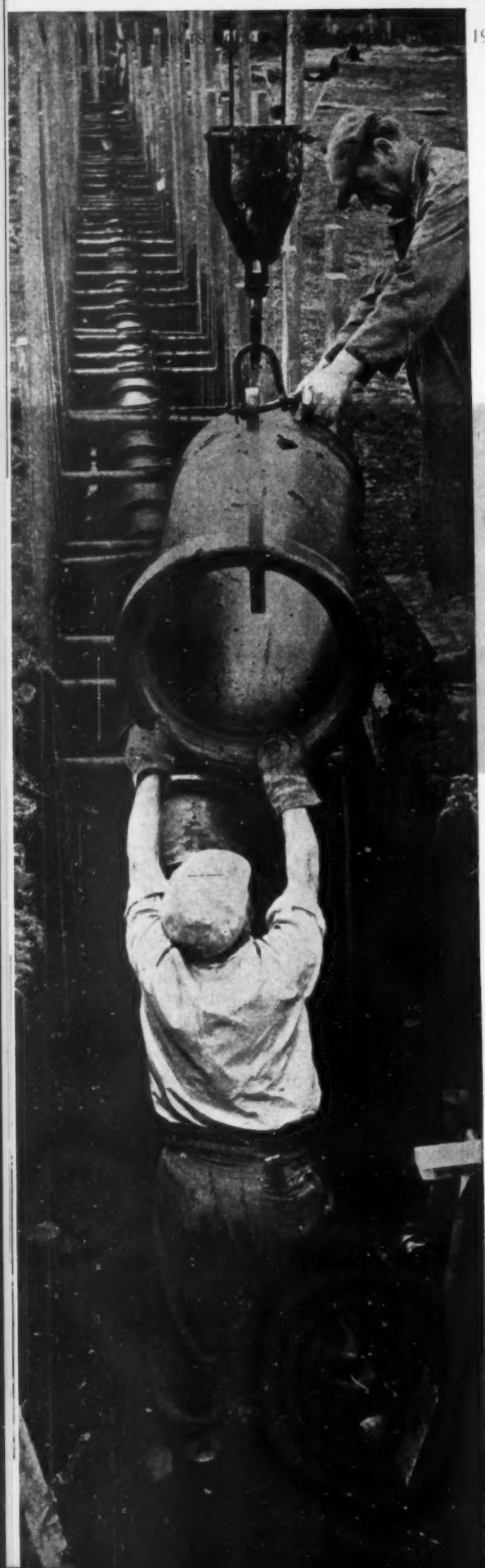
**overhead travelling crane**

## BRITISH INDUSTRIAL

ENGINEERING COMPANY (STAFFS) LIMITED

CORONATION WORKS · HAINGE ROAD · TIVIDALE · TIPTON · STAFFS

*Telephone* : TIPTON 1222/3/4



1960

# Glazed the

# Vitrified

# Clay Pipes

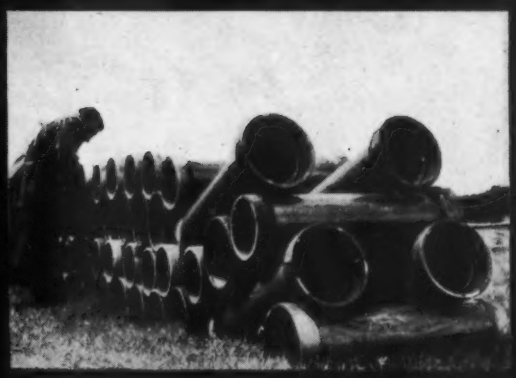
Dr. Felix Singer, Dr.Ing., Dr.Phil., M.I.Chem.E.
an acknowledged authority, after exhaustive study wrot
"Both time and laboratory tests have proved stoneware
pipes to be the most reliable method of conveyin
all waste fluids underground."

*For information write to The Secretary,*

THE NATIONAL SALT GLAZE PIPE

# the pipe material that never wears out





Drainage Pipes must be strong and smooth. They must resist the effects of abnormal pressures and of abrasives. They must be proof against acid-forming gases inside the pipes and acidic substances in the soil. They must have a low and non-progressive rate of absorption. They must retain their shape indefinitely. They must stay down—maybe for centuries.

Nobody knows what virulent effluent future industrial development may introduce into today's drains.

There is only one safe choice. Put down **glazed vitrified clay pipes** — there is no adequate substitute.

PIPE MANUFACTURERS' ASSOCIATION
Hanover Court, Hanover Square, LONDON W.1.
*Telephone : MAYfair 0364*

GLAZED VITRIFIED CLAY PIPES



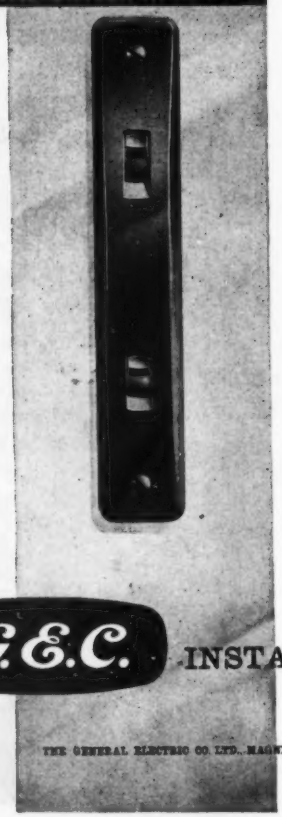
*Mutac Clipper switches have been accepted by the Council of Industrial Design for Design Index—so architects, consulting engineers and contractors are choosing them for their good looks, as well as for their functional efficiency and easy assembly.*

# *just a minute!*

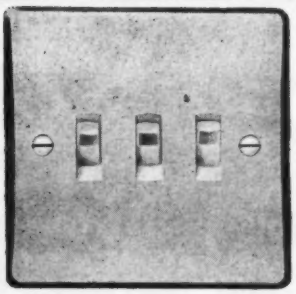
## that's all it takes to instal the new

# 'MUTAC CLIPPER'

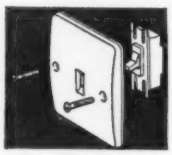
**ARCHITRAVE SWITCH ASSEMBLY**



**PLASTER DEPTH SWITCH ASSEMBLY**



Take either a 'Mutac Clipper' plaster depth or architrave switch plate and select the required switch, bell push or pilot light. Simply press home the spring clip with a small screwdriver and a fixed plate assembly is ready for installation. Available in 1, 2 or 3 gang for plaster depth and 1 and 2 gang for architrave. 'Mutac Clipper' switch assemblies will cut installation costs and save time as additions and alterations can be made with the minimum of effort.



G.E.C. INSTALLATION EQUIPMENT GROUP

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

**SWITCH AND FUSE GEAR**
**H.R.C. FUSES**
**OVERHEAD BUSBARS**
**RISING MAINS**
**CONDUIT**
**PIRELLI GENERAL CABLE**
**CABLE TRUNKING**
**UNDER-FLOOR CABLE DUCTS**
**ELECTRIC WIRING ACCESSORIES**
**BELLS**

# For utmost efficiency in Thermal Insulation and Sound Reduction




## ...PURPOSE-MADE IN FINEST TIMBERS TO ARCHITECT'S SIZE, STYLE AND FINISH

**BUILDING RESEARCH STATION TESTS**

*When a standard-production TOMO WINDOW WALL-Unit (8 ft. × 8 ft.) was tested at the Building Research Station, Garston, the mean thermal transmittance of the complete unit was found to be 0.31 B.Th.U./sq. ft./h/°F. This is equal to the thermal transmittance of a traditional 11-in. cavity brick wall! This impressive result was further improved to 0.29 when the TOMO Pleated Blinds, fitted between the panes, were lowered.*

*The U-value of the window-area only was found to be 0.38: with TOMO pleated blinds down, it became 0.35. At 0.38, TOMO double-glazed WINDOWS are substantially (29%) better than the U-value of 0.47 quoted for conventional double windows in the I.H.V.E. Guide to Current Practice, 1955.*

The excellent thermal-efficiency achievement of TOMO double-glazing (amply demonstrated in the report of recent B.R.S. Tests, quoted on left) is one of many good reasons why architects specify these superb windows.

Another is the ever-increasing need for maximum sound reduction. In this respect TOMO WINDOWS with 32-ounce glass spaced at a standard $1\frac{3}{8}$", afford a reduction in sound level of approximately 40 decibels —thicker glass gives still better results.

The marked success of TOMO double-glazed WINDOWS is due to the fact that two panes of glass are carried in separate sashes which, in turn, are coupled together in such a manner that air filtration can take place between the panes. This time-honoured method of coupling, which is used extensively throughout Scandinavia, not only prevents condensation forming between the panes but allows the sashes to be opened for the purpose of cleaning the insides of the two panes and for gaining access to TOMO pleated blinds that can be housed between them.

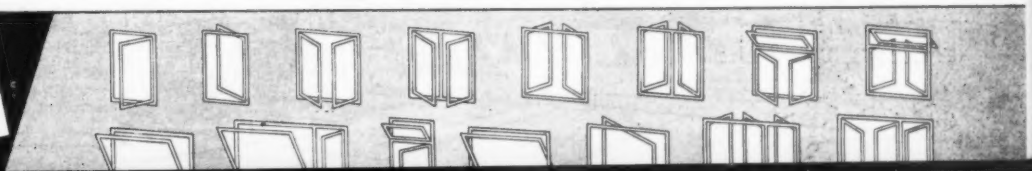
TOMO double-glazed WINDOWS also offer the advantages of finely-controlled ventilation and total indoor window-cleaning. They are suitable for inward or outward opening and can be top-hung, bottom-hung, side-hung or pivot-hung.

*Full information forwarded on request:*

**TOMO TRADING CO. LTD., COWLEY PEACHEY, UXBRIDGE, MIDDX.**
Telephone: West Drayton 3751 (10 lines)

*ONE OF THE TOMO GROUP OF COMPANIES*

**WIDE RANGE OF STYLES!**



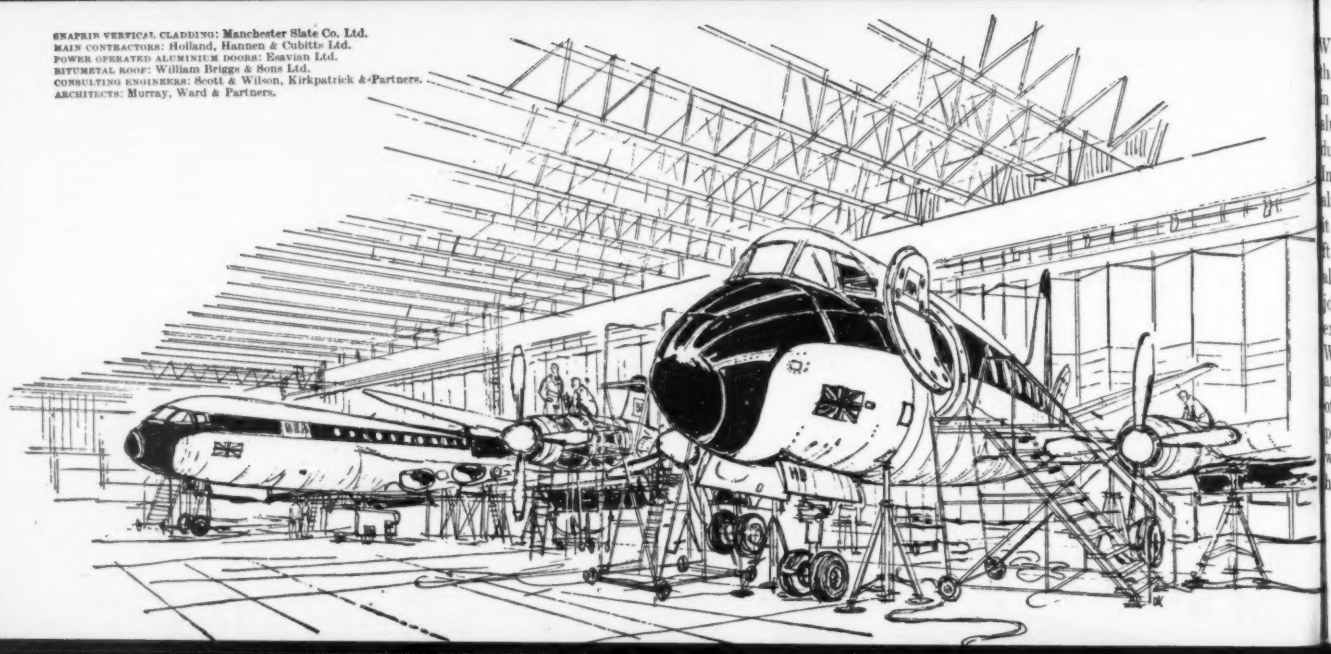



...and behind the name

# Noraa




SNAPRIB VERTICAL CLADDING: Manchester Slate Co. Ltd.
MAIN CONTRACTORS: Holland, Hannen & Cubitts Ltd.
POWER OPERATED ALUMINIUM DOORS: Esavian Ltd.
BITUMETAL ROOF: William Briggs & Sons Ltd.
CONSULTING ENGINEERS: Scott & Wilson, Kirkpatrick & Partners.
ARCHITECTS: Murray, Ward & Partners.



# aluminium



TBW/T62

What bigger challenge to architectural ingenuity than a building severely practical in use yet always in the public eye? What better answer than aluminium—Noral aluminium—with its lifelong durability and its lasting good looks!

In the new BEA hangar at London Airport, Noral aluminium is used extensively—nearly 300 tons of it in the roof, doors and walls. More than 25,000 sq. ft. of Noral Snaprib has been used for the walls alone, mostly in the form of 25ft. lengths. The snap-joint sheets interlock along their full length, need no external fastenings, and are completely leak-proof. Wherever good looks, long life and low maintenance costs are important factors, consider the virtues of aluminium. And for specialised knowledge and practical help on specific problems, get in touch with our nearest sales office. We shall be glad to hear from you.

**Noral**

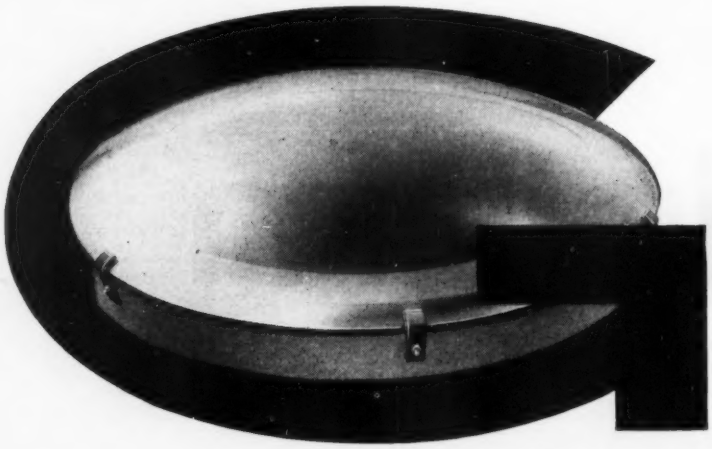
**NORTHERN ALUMINIUM CO. LTD.**

*Sales Offices:* **BELFAST:** Donegall House, 7 Howard Street Telephone: Belfast 32805 **BIRMINGHAM:** Devonshire House, Great Charles Street, 3 Telephone: Central 7393 **BRISTOL:** Peloquin Chambers, 18 St. Augustine's Parade, 1 Telephone: Bristol 20351 **LEEDS:** 26/27 Park Row, 1 Telephone: Leeds 33621 **LONDON:** 50 Eastbourne Terrace, W2 Telephone: Paddington 3281 **LUTON:** 57 Bute Street Telephone: Luton 7364-5 **MANCHESTER:** 23 Princess Street, 2 Telephone: Central 9335 **NEWCASTLE UPON TYNE:** Groat House, Collingwood Street, 1 Telephone: Newcastle 20878 **Castings & Forgings Sales Division,** Middlemore Road, Handsworth, Birmingham. Northern 3671

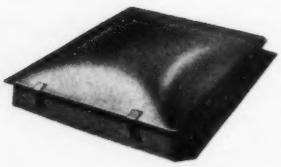
Noral

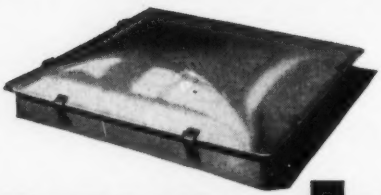
ALCAN

A member of the ALUMINIUM LIMITED OF CANADA



# Glass roof domes





# are best!



Houghton Modern Secondary School, Darlington.
*Architect: Borough Architect, County of Darlington.*
*Contractor: Edgar Lawson Ltd.*

- **pass ample light**
- **last for ever**
- **are fire resistant**
- **need no maintenance**
- **never lose their shape**

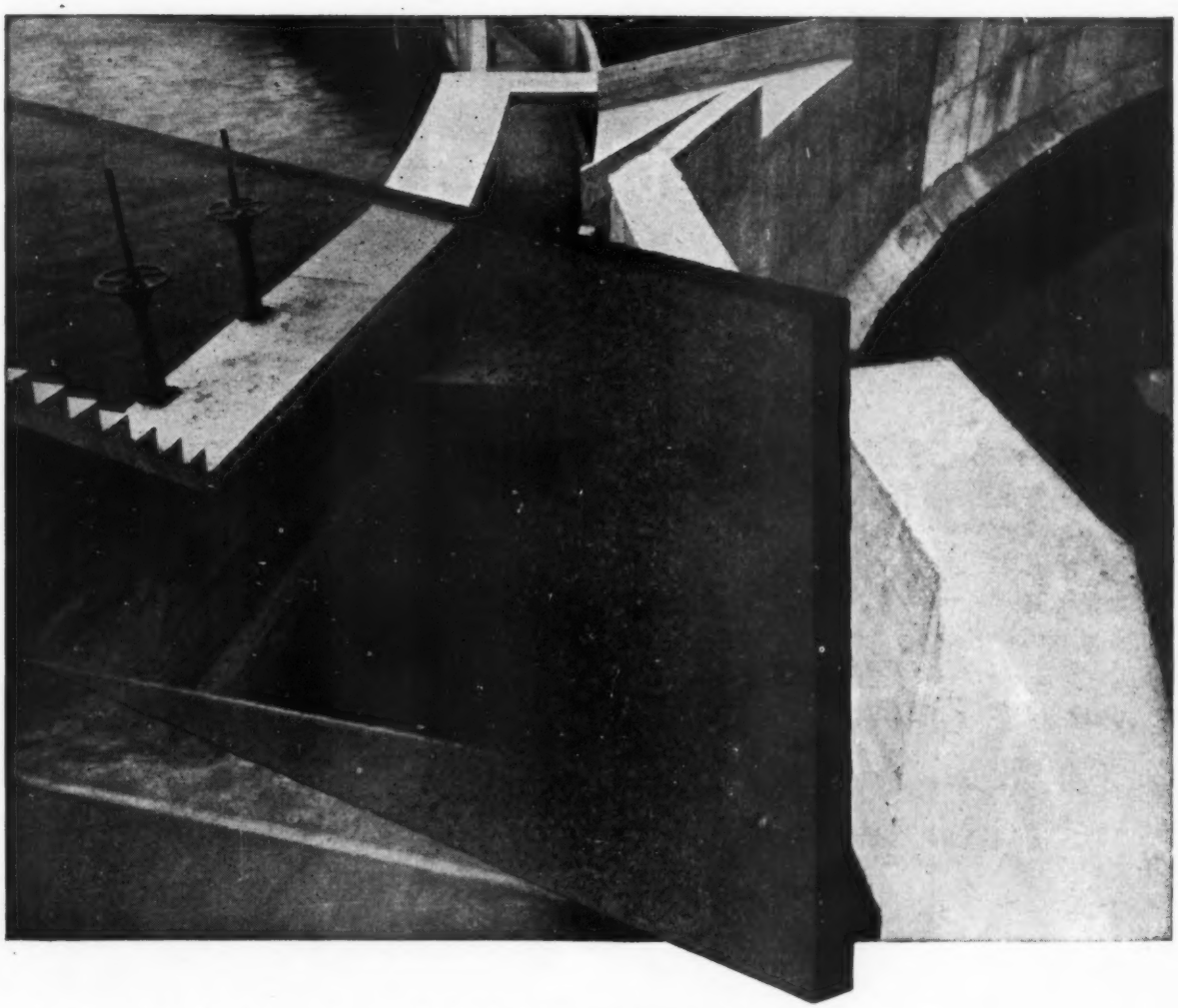
Glass roof domes have many advantages over other forms of roof lighting . . . they pass ample light, last for ever and are fire resistant. Glass roof domes are leak-proof, and easy to fix on metal, wood or concrete curbs; they need no maintenance and *never lose their shape.*

Think of glass roof domes for your next building.

specify **GLASS** roof domes

## Glass Benders Association

6 MOUNT ROW, LONDON, W.1. MAYFAIR 8334



The constructional problems encountered in building this reservoir are similar to those found in a wide variety of water-retaining structures. It is imperative that joints between supporting columns and the floors are resistant to seepage and yet allow for any expansion or contraction between them.

Expandite products solved this problem of 'joints-that-move'. PVC Hydrofoil waterstops were cast in the concrete; the joints were then packed with strips of 'Flexcell', a non-extruding joint filler (specially manufactured for Expandite by Celotex Ltd.) and then top-sealed with 'Pli-astic', a hot-poured rubber-bitumen joint sealing compound and, in certain cases, with 'Plastijoint' flexible, water-proof sealer.

Movement was allowed for, but, because all these products are sufficiently flexible to allow for movement and yet retain their original shape on contraction, no seepage will occur.

Problems of 'joints-that-move' take many forms, but Expandite Limited manufacture products to solve them all. Architects, Builders and Civil Engineers are offered advice—without any obligation—on all sealing and jointing matters they may wish to put before the Expandite Technical Service Department.

# ANOTHER JOINTING PROBLEM SOLVED

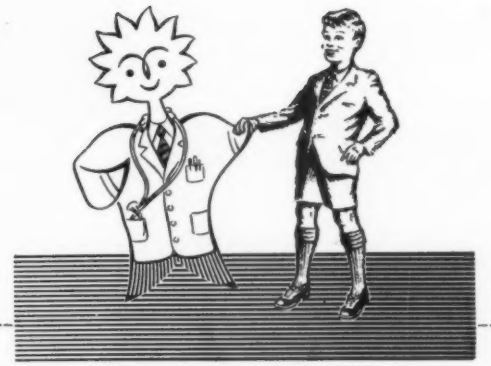
EXPANDITE LIMITED

*Specialists in the manufacture and use of Joint-Fillers, Sealing and Waterproofing Compounds, Concrete Additives, Anti-Corrosion Treatments and Mechanical Appliances.*
CHASE ROAD, LONDON, N.W.10. TELEPHONE: ELGAR 4321 (14 lines)
Northern Depot: Trafford Park Road, Manchester 17. Eire: Expandite (Ireland) Limited, Greenhills Road, Walkinstown, Dublin
*ASSOCIATES AND DISTRIBUTORS THROUGHOUT THE WORLD*


it's his
future...
...backed by MR.



ISSUED BY THE GAS COUNCIL



Essential to all concerned with the choosing and usage of gas appliances, and kitchen planning for commercial catering . . . The Gas Council's CATERING HANDBOOK. Price 4/- from your Area Gas Board.

# THERM who Burns to Serve health always . . .




. . . in all ways. Today, the target is clean air, hot water in every home, hygienic kitchen surfaces—what of tomorrow? He will grow up with Mr. Therm, for each advance made by Architects and Builders will be helped by the unceasing research of the Gas Industry into even better and more economical means of providing warmth and comfort. Through the twelve Area Gas Boards, the Gas Industry offers an unrivalled free advisory service on fuel to all Architects and Builders.

**Write or 'phone your problem to your Gas Board NOW**



# Another 'first' for Aerolite





This revolutionary type of roof is the first to be constructed on a new principle evolved by John Amor, A.R.I.B.A. It gives a clear span entirely free from obstruction, and is made possible by modern gluing techniques. Each section consists of a series of 4 ft square patent units of plywood, bonded with Aerolite KL radio frequency cured and Aerodux 185 cold setting resins. Features of the roof are light weight and ease of erection, a complete 50 ft section being assembled, connected, stressed and positioned by four operators in 1½ hours. The strength and durability of the structure are entirely dependent on the bonding provided by CIBA (A.R.L.) glues, which are unaffected by damp, heat or cold, and are completely resistant to bacterial attack.

Motor showrooms at Ongar, Essex

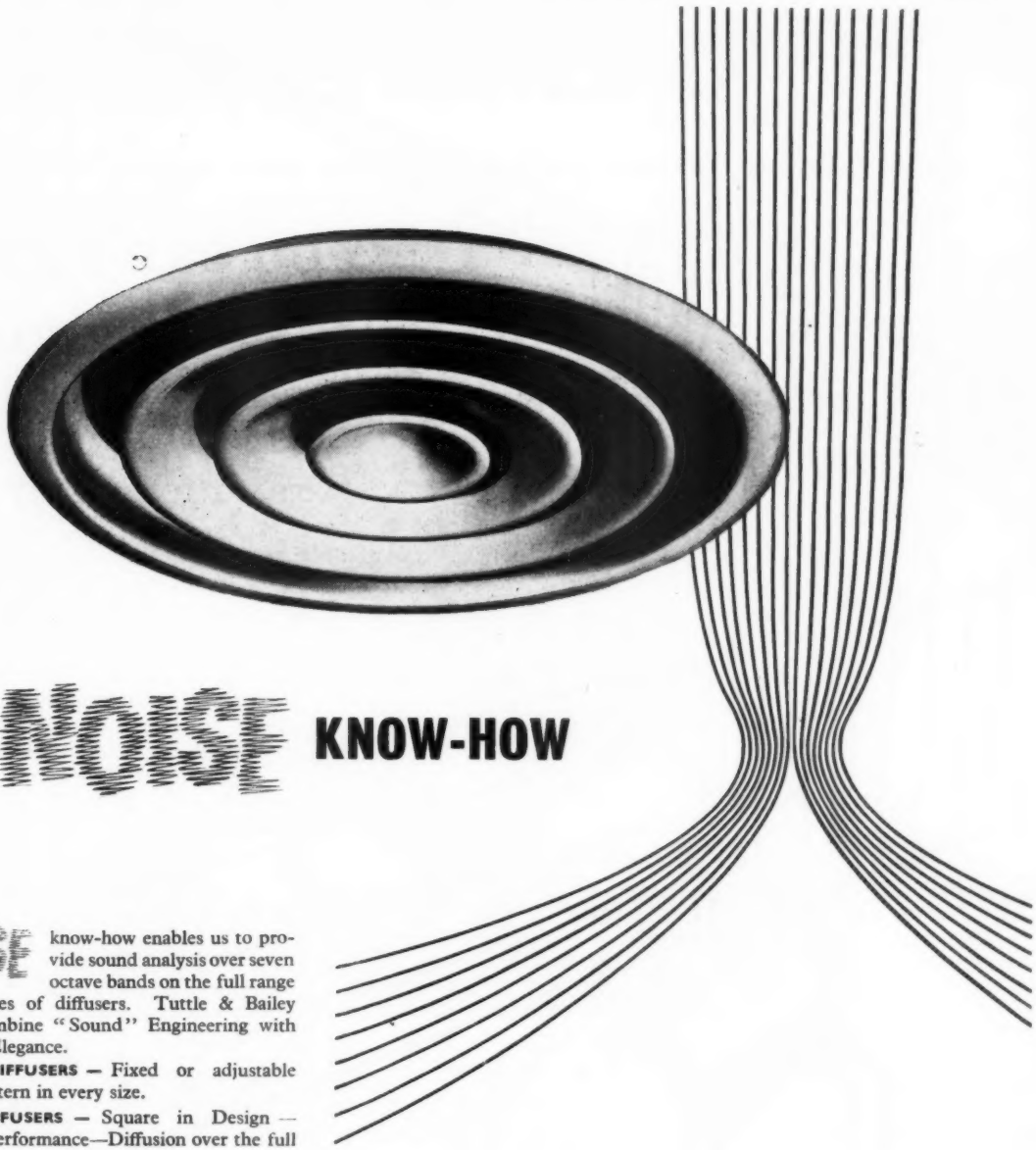
Architect and Designer: John Amor, A.R.I.B.A.
Structural Consultant: Eric Catchpole, A.M.I.Struct.E.
Constructors: Stressed Skin Structures Ltd, Edmonton, N.18.

Aerolite *Aerolite and Aerodux are registered trade names*

**GLUES FOR WOOD**

**CIBA (A.R.L.) LIMITED**
*Duxford, Cambridge. Telephone: Sawston 2121*

AP 519



# NOISE KNOW-HOW

NOISE know-how enables us to provide sound analysis over seven octave bands on the full range of many types of diffusers. Tuttle & Bailey Diffusers combine "Sound" Engineering with Quality and Elegance.

**CIRCULAR DIFFUSERS** — Fixed or adjustable Diffusion Pattern in every size.

**SQUARE DIFFUSERS** — Square in Design — Circular in Performance—Diffusion over the full 360°.

**LINEAR DIFFUSERS**—to match straight-line design concepts.

**MARKETED BY**

*powell duffryn modulair ltd*

pdm

TUTTLE & BAILEY

POWELL DUFFRYN HOUSE, BERKELEY ST., LONDON, W.1 TEL: GROSVENOR 5146

**AIR DISTRIBUTION EQUIPMENT**

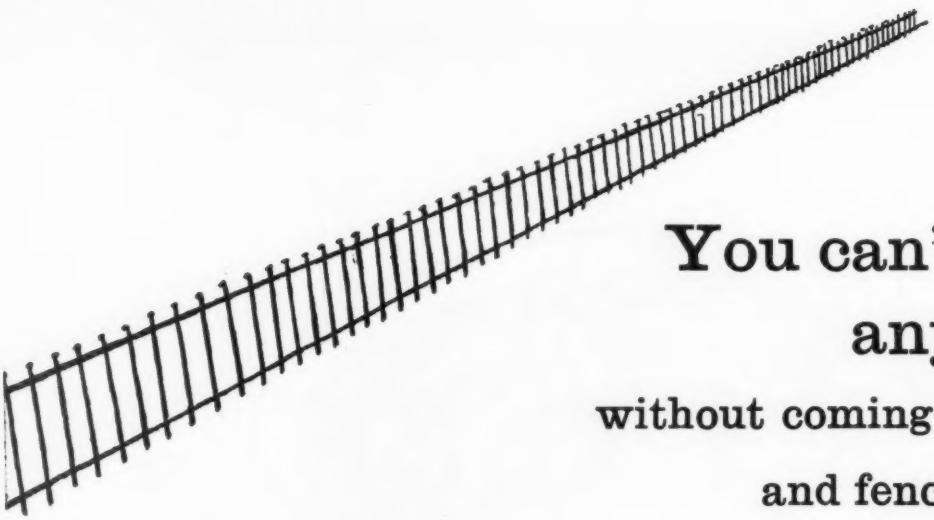
*Attach this coupon to your letter heading for further details of our complete range of Air Distribution Equipment.*

NAME .....

ADDRESS .....

.....

**POWELL DUFFRYN MODULAIR LTD., Powell Duffryn House, Berkeley St., London, W.1** 23/FA



# You can't go anywhere—

## without coming across gates and fences by BJB



Anything in wrought ironwork is a job for BJB.

Have a word with them—while the iron's hot!

BJB

GKN

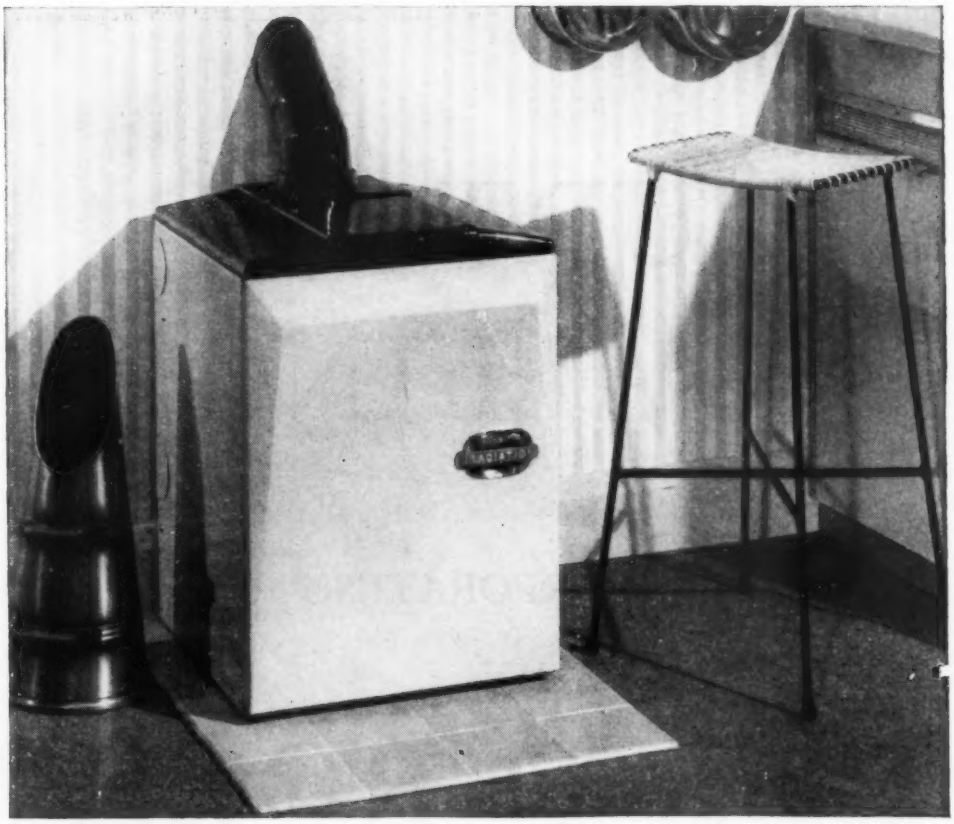
**BAYLISS, JONES & BAYLISS LIMITED**

*Makers of fencing and gates for over a century*

HEAD OFFICE: VICTORIA WORKS, WOLVERHAMPTON • TELEPHONE WOLVERHAMPTON 20441
LONDON OFFICE: 139 CANNON STREET, LONDON E.C.4 • TELEPHONE MANSION HOUSE 8524

# The compact Nautilus 55

## provides hot water plus central heating for the small house



The size of the Nautilus 55 belies its big performance. With dimensions of only 26¾″ high x 18¾″ wide x 19¾″ deep, it has the highest rated output in its class in the official List of Recommended Domestic Solid Fuel Appliances. Its rated output is 30,000 B.t.u./hr., which will supply an abundance of hot water for all domestic purposes and heat no less than 80 sq. ft. of radiator surface as well. Or it will serve a compact central heating system of 130 sq. ft. radiating surface. At the other end of the scale, its accurate, automatic control will allow it to burn as little as ½ lb. of coke an hour.

A system of rotating crusher bars grinds everything not burned (including stones and shale) to ash. This can be cleared along with the normal combustion ashes and avoids the need for letting the fire out periodically. The water jacket completely surrounds the fire and all waterways can be cleaned without breaking the water connexions.

**And an oil-fired model**

The Nautilus 0.25—as utterly dependable as the well-known solid fuel model—is now available after exhaustive district tests. It has the same good looks and is almost identical in size (small enough for the small kitchen). The remarkable simplicity of burner design and of the heat exchanger/boiler reflect the same high standards of Radiation engineering.

Radiation

NAUTILUS 55

AUTOMATIC BOILER

*Technical information sheet available from:*

**RADIATION GROUP SALES LTD · SOLID FUEL DIV · 255 NORTH CIRCULAR ROAD · LONDON N.W.10**

# GLASCRETE

# CURTAIN WALLING

INCORPORATING

# "COL-O-ROCK"

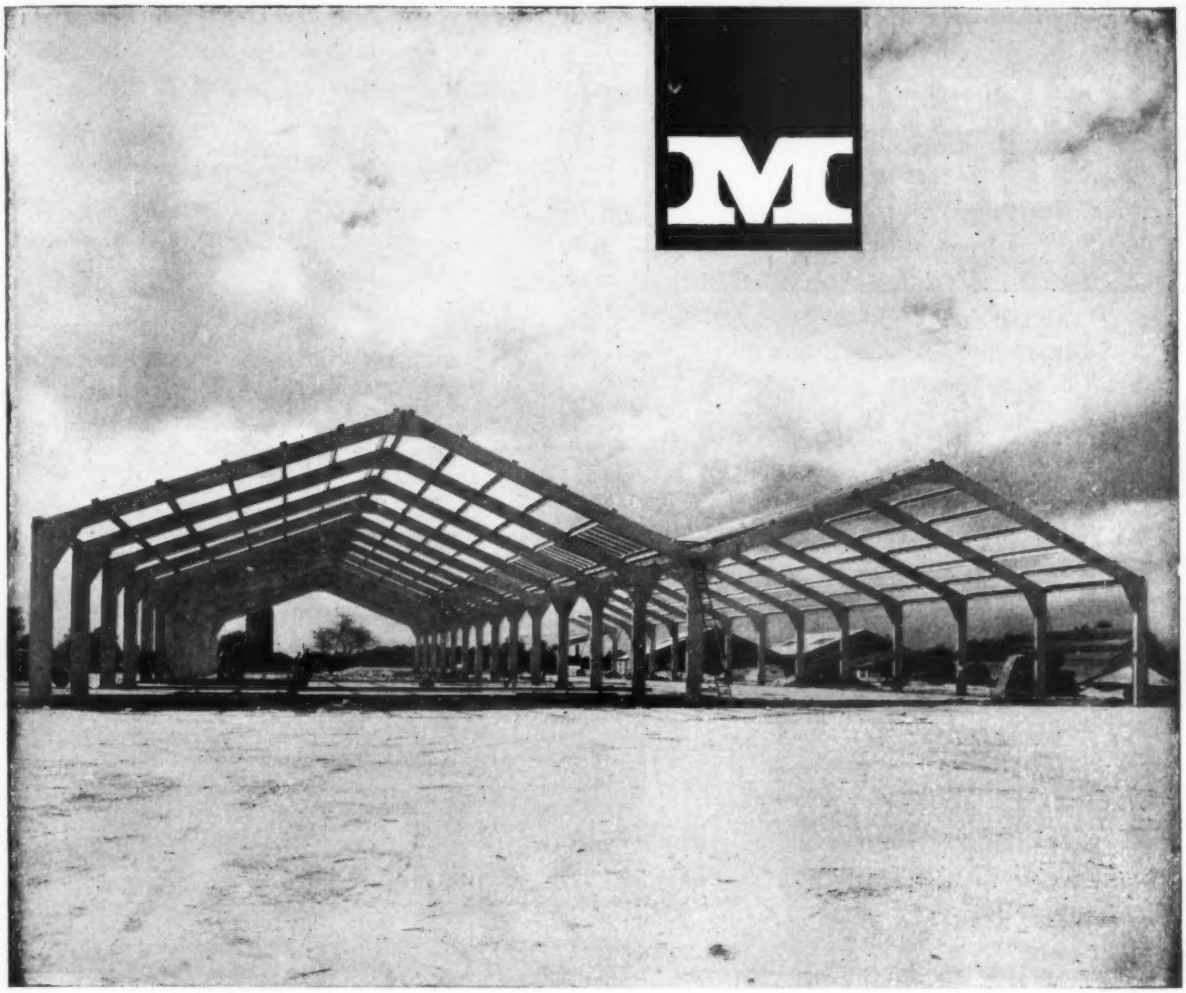
(Registered Trade Mark)

EXPOSED AGGREGATE PANELS

By

## J. A. KING & CO., LTD

181 Queen Victoria St., LONDON, E.C.4.
Telephone: Central 5866



# The most efficient Clear Span Building in the World

Marley are now contracting everywhere for these pre-cast concrete buildings of 3 piece rigid frame construction. They are factory made to highest standards of quality for commercial, industrial and agricultural applications, and are quickly erected. They require little maintenance. Spans 18′ to 65′ plus.

NATIONWIDE SUPPLY AND ERECTION SERVICE INCLUDES FOUNDATIONS, FRAMEWORK, ROOFING AND GUTTERS IF REQUIRED.

**MARLEY CLEAR SPAN BUILDING** *Please write for our fully illustrated literature*

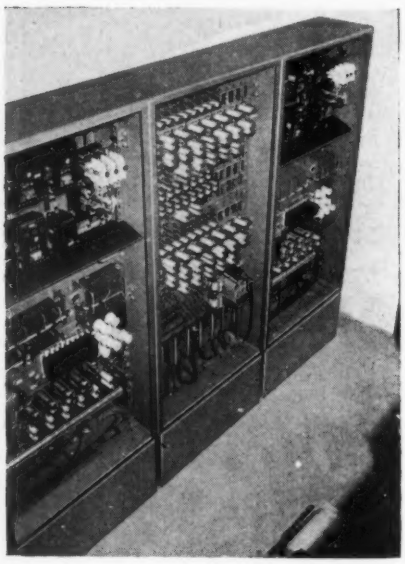
**MARLEY CONCRETE LIMITED,** Dept. S19
Peasmarsh, Guildford, Surrey. (Head Office) Guild. 69171 · Hatchpond Lane, Waterloo, Poole, Dorset. Broadstone 626
Shurdington, Nr. Cheltenham, Glos. Shurdington 334/5 · London Showrooms: 251 Tottenham Court Road, W.1.

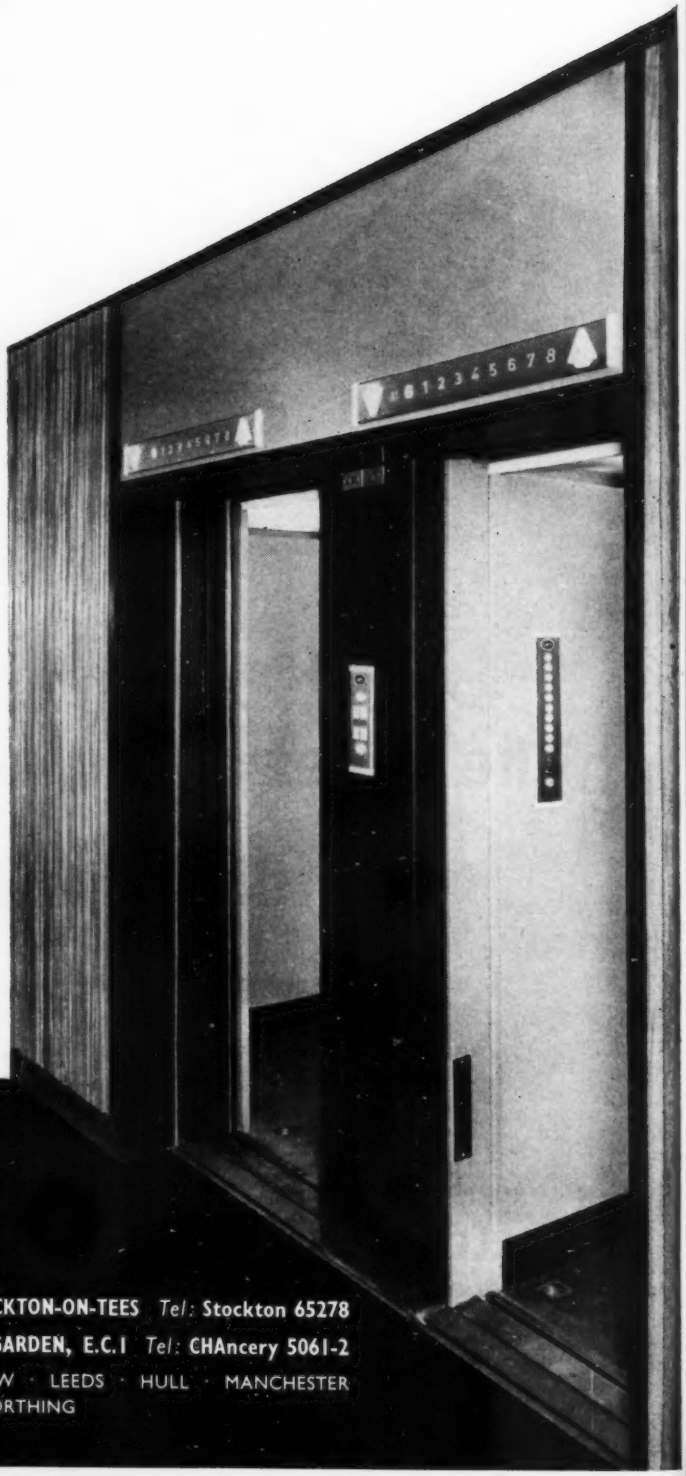
CSI/60

# PICKERINGS LIFTS

These two Pickerings Passenger Elevators each have accommodation for ten persons; they serve ten floors and operate at 300 ft. per minute. They embody the very latest innovations—the new "Polylift" duplex collective system, have "Isostop" V.V. control, and automatic, light ray controlled doors.

The cars are steel panelled, with vinyl plastic linings. Push buttons and indicators of modern design complete these efficient and attractive lifts.





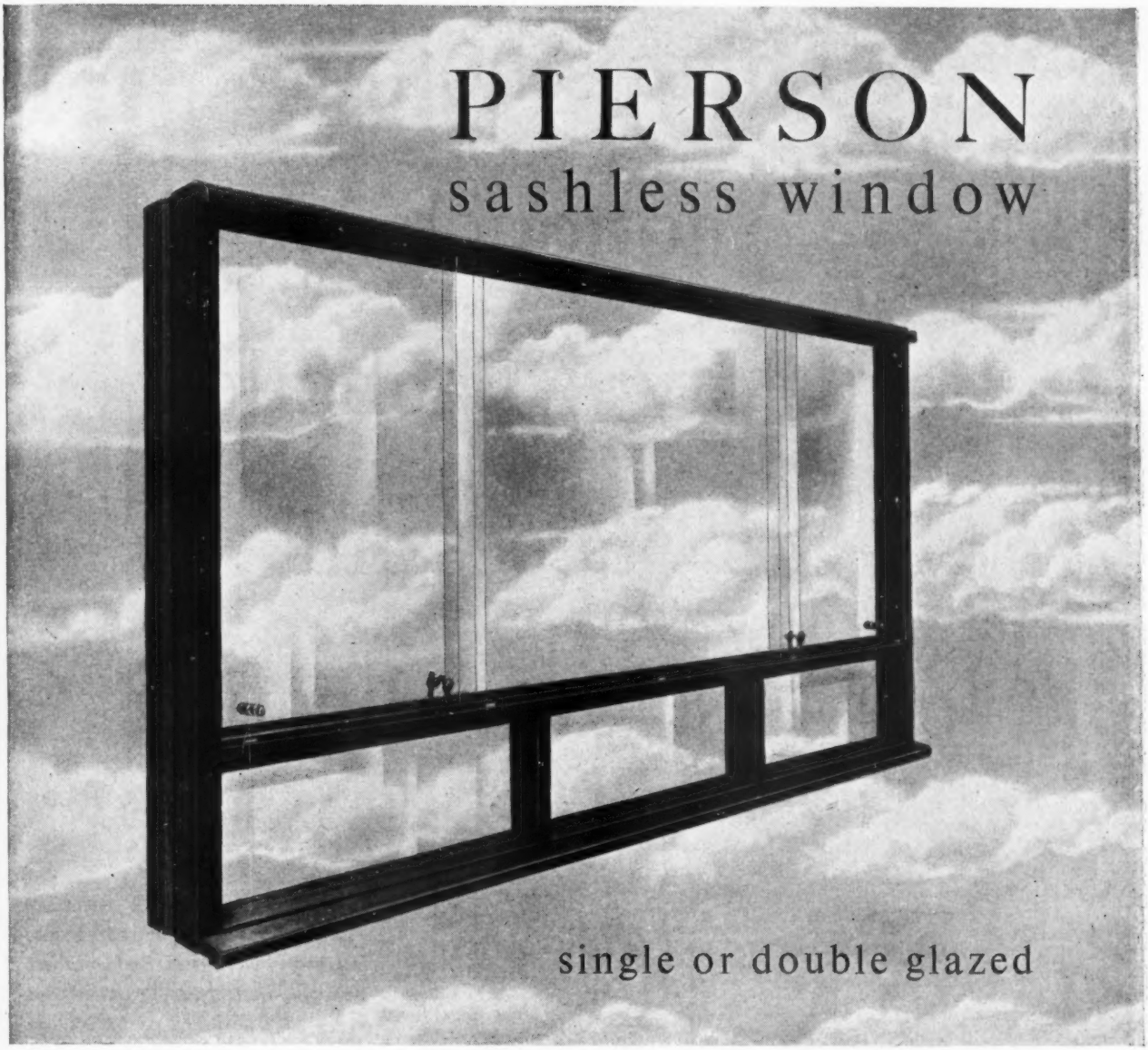

ESTABLISHED 1854

## PICKERINGS LIMITED

*Head Office and Works:* **GLOBE ELEVATOR WORKS · STOCKTON-ON-TEES** *Tel:* **Stockton 65278**

*London Office:* **GLOBE HOUSE, 12 ST. CROSS ST. HATTON GARDEN, E.C.1** *Tel:* **CHAncery 5061-2**

*Branches:* BELFAST · BIRMINGHAM · BRISTOL · GLASGOW · LEEDS · HULL · MANCHESTER
NEWCASTLE-ON-TYNE · SCARBOROUGH · WORTHING




## 'THE GREATEST ADVANCE IN WINDOWS SINCE GLASS'

warmth—quiet—beauty: *Three qualities provided in a wide range of handsome Windows designed for handsome buildings.*

warmth and quiet *from the insulation of double glazing :*

beauty *in wide full vision picture windows framed in selected West African Hardwood.*

**Horizontally sliding panes of Crystal Glass with polished edges glide smoothly in the specially grooved hardwood frames which are treated with a high performance durable sealer. The panes of glass are easily and safely removed for cleaning and maintenance, and the patented 'Pierson' two-way locking device ensures freedom from draughts and offers complete security.**

*Further particulars can be obtained from the following sole area Manufacturers of the 'Pierson' Window in the United Kingdom*

**JAYANBEE JOINERY LTD.**
High Street, Uxbridge, Middlesex. *Telephone:* Uxbridge 8222

**THE MIDLAND JOINERY WORKS LTD.**
Burton-on-Trent. *Telephone:* Burton-on-Trent 5721

**ALLAN BROS. LTD.**
Tweed Saw Mills, Berwick-upon-Tweed. *Telephone :* Berwick 7443

**PRICE BROS. & CO. (PENARTH) LTD.**
Station Road Penarth. *Telephone:* Penarth 57255

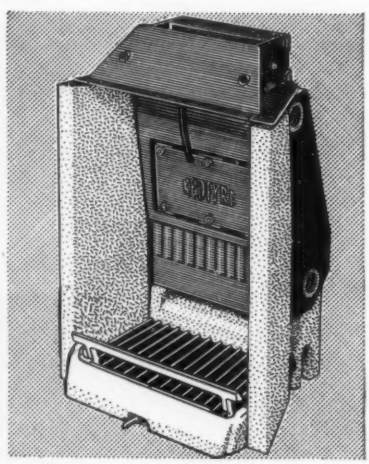
**HIDE & CO. (BLACKPOOL) LTD.**
Squires Gate, Lytham St. Annes. *Telephone:* Blackpool 42001

# There's nothing to touch a Redfyre Bacboiler for successful low-cost water heating





*Redfyre 60*



*Hearth Redfyre*

THAT'S WHAT MAINTENANCE PEOPLE SAY — and that's why huge numbers go into new homes every week. And now there are two *new* Ministry-approved Bacboiler fires — the Hearth Redfyre with underfloor air-feed; and the low-cost Redfyre 60, a controlled-burning fire accepted by the Council of Industrial Design. Both have exceptionally pleasing modern lines. And both (like all the Bacboiler range) supply ample hot water *and* heat one or two radiators — or up to four if hot water isn't needed. May we send you full details?

REDFYRE

**NEWTON CHAMBERS & COMPANY LIMITED Redfyre Products Thorncliffe Sheffield**



FERODO
STAIRTREADS
KEEP IN STEP
WITH
MODERN DESIGN

Ferodo non-slip stairtreads bring to these modern stairs a clean line, maximum safety for the people who use them, and years of life without maintenance or renovation.

* *7 attractive colours*
* *Comprehensive range — 32 treads with nosings, 3 flat treads, 2 steel-backed types*
* *Aluminium, silver bronze or manganese bronze channels*
* *Special orders can be manufactured*

Write to our Stairtread Department for full illustrated literature for your file.

**FERODO** non-slip stairtreads

FERODO LIMITED · CHAPEL-EN-LE-FRITH *A Member of the Turner & Newall Organisation*

8/47

# ROLLING SHUTTERS

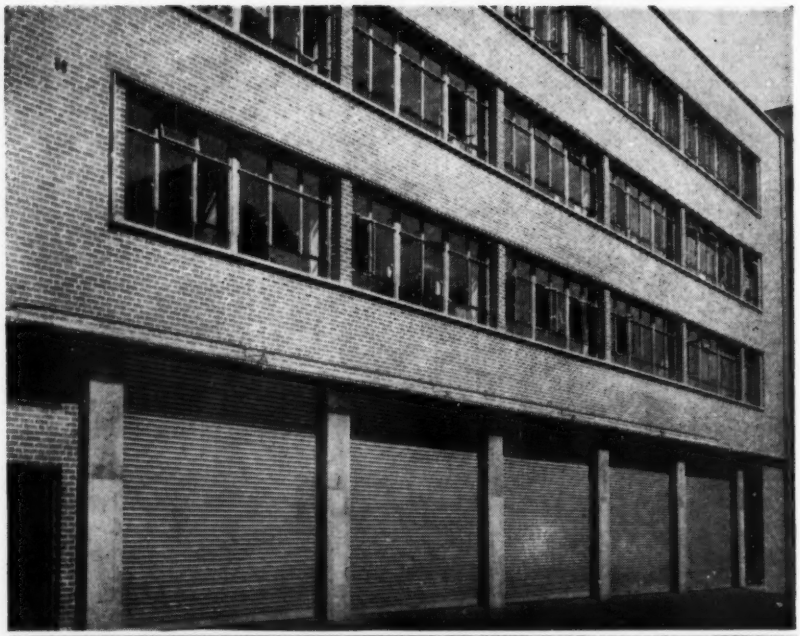
**IN STEEL ALUMINIUM ALLOY OR WOOD**

*hand or power operated*

- QUICK DELIVERY
- SERVICE AFTER SALES

**FOR ANY SIZE AND KIND OF OPENING**

*Send for illustrated literature to DEPT. R13*



ROLLER SHUTTERS LTD

ANNE ROAD, HANDSWORTH, BIRMINGHAM 21. Telephone: SMEthwick 2211 (6 lines)





## "Haven't they heard about PHENCO floors?"

Phenco vinyl-plastic flooring possesses just about every virtue a hospital could ask for. It is so resilient and comfortable to the feet. It stands up to both sudden impact (dropped trays!) and prolonged hard wear (all that coming and going). It is impervious to liquids from castor oil to spilt milk. It is non-slip, non-staining and virtually fireproof. It dampens noise wherever it is laid. Finally, it can be welded to make a jointless surface, it can't harbour dirt and is wonderfully easy to clean. Could you ask for anything more?

**PHENCO** VINYL PLASTIC FLOORING

For operating theatres and labour wards, there is a special grade—which overcomes the danger of static explosion and low tension shock.

*For further details, write or 'phone:—*
**PHOENIX RUBBER CO. LTD.,**
Trading Estate, Slough, Bucks.
Slough 22307/9.

OA/5512

**AN IMPORTANT ADVANCE IN FLUSH DOOR TECHNIQUE**

# V.S.F.



FOR THE SURFACE LIKE SMOOTH VELVET

*"Velvet Seal" Finish* — THE NEW PLYWOOD SURFACE SEALING PROCESS DEVELOPED AND USED EXCLUSIVELY BY **LEADERFLUSH** FOR ALL FLUSH DOORS WHICH ARE TO BE POLISHED OR VARNISHED

NO SANDING · NO FILLER REQUIRED · ONE COAT ONLY OF POLISH OR VARNISH · MOISTURE RESISTANT · IMPERVIOUS TO HANDLING MARKS ON SITE AND IN TRANSIT · FASTER SITE PROGRESS · BIG SAVING IN COSTS

***V.S.F. is applied at no extra cost***

*Used exclusively on*

**leaderflush**

BRITAIN'S FINEST FLUSH DOORS

*Illustrated folder sent on request*

**LEADERFLUSH (Doors) LTD., TROWELL, NOTTINGHAM** · **Telephone : Ilkeston 623 (5 lines)**

**LONDON OFFICE : BUSH HOUSE, ALDWYCH, W.C.2. Tel : COVent Garden 2243**

601 Cogent



# Brush off the fear of FIRE!

With OXYLENE BORAM Fire Retardant Coating which raises inflammable surfaces to Class 1 "surface spread of flame" (B.S. 476–1953).

OXYLENE BORAM can be over-painted or applied to painted surfaces without loss of fire retarding qualities. It gives real fire protection and is approved by Local and Fire Authorities.

*"Used in every Industry"*

*Write for particulars.*

we draw the line at fire!

OXYLENE BORAM

Use TRANSPARENT for Veneers and Fabric RINSE for Textiles

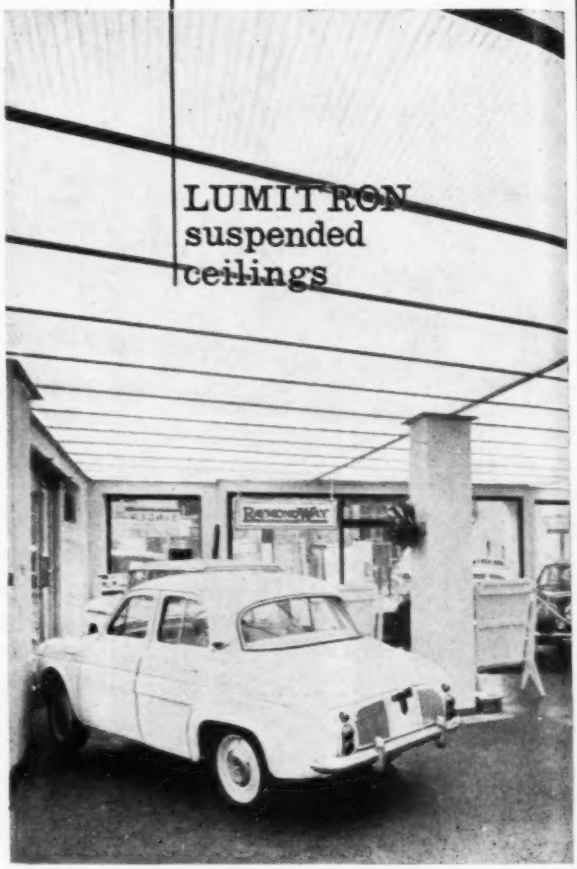
FIRE RETARDANT COATING

THE TIMBER FIREPROOFING CO. LTD.,
13a Old Burlington Street, LONDON, W.1.
Tels: Regent 2489 (2 lines)
Works at:— Market Bosworth, Nuneaton
Queen Elizabeth Avenue, Hillington, Glasgow, S.W.2.

DH82376 B



*above all...*




*for economy elegance and increased sales*

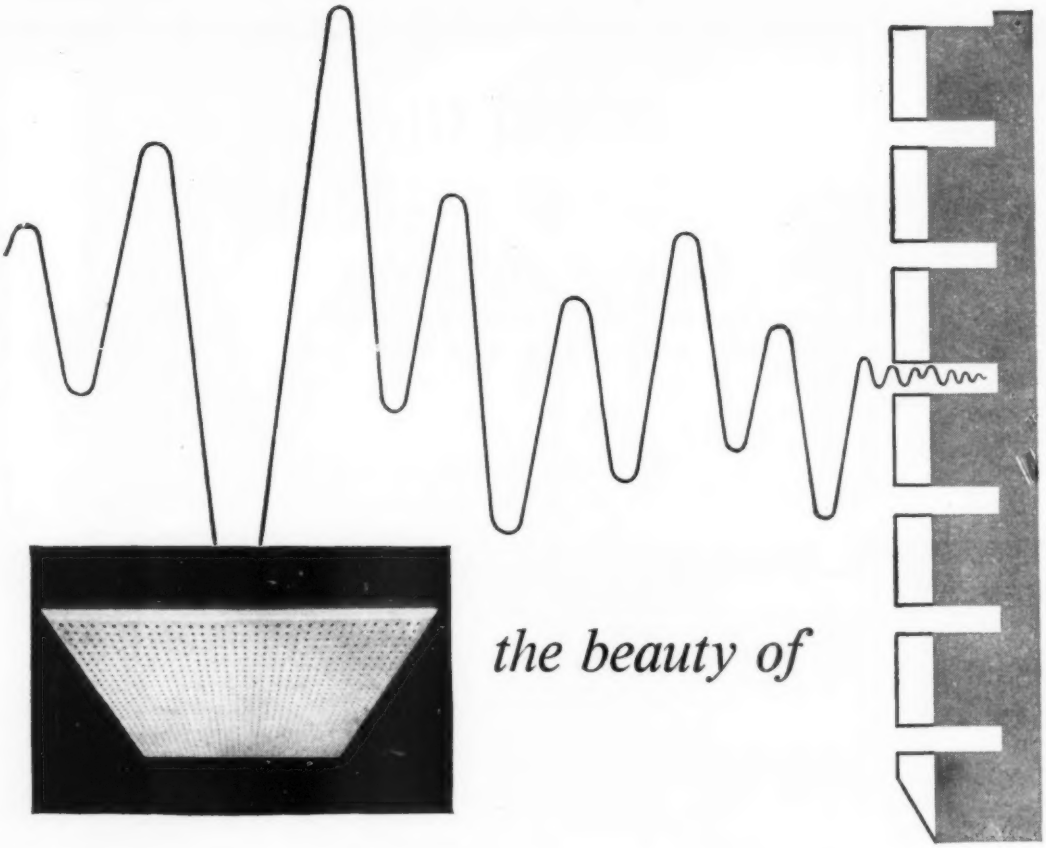
LUMITRON *are already nationally renowned among architects and electrical contractors for their impeccable range of lighting fittings. Now they are introducing their unique pre-fabricated suspended ceilings, with which every electrical contractor and shopfitter can carry out his own installations from beginning to end. Designed to give the maximum value at minimum cost. LUMITRON suspended ceilings enable contractors to secure the best in this kind of ceiling at manufacturer's cost – so ensuring tremendous economy all round.*

*Write for detailed brochure today.*

LUMITRON multi-purpose suspended ceiling

BRITISH LIGHTING COUNCIL BLC MEMBER

*Lumitron Ltd.,*
*Lighting Fittings Manufacturers*
*180, Shaftesbury Avenue, London, W.C.2.*
*Telephone: Covent Garden 0126/7.*



*the beauty of*

# **PAXTILES** *is more than skin deep* ✳

That is the mark of the genuine Paxtile; it is the reason why Paxtiles provide the most effective sound insulation. Not only do Paxtiles fulfil this basic requirement they additionally offer a marked degree of heat insulation. They are absolutely FIREPROOF, rotproof, vermin proof and corrosion resistant. Paxtiles embody a distinctive form of decoration, adding handsomely to the decor of ceilings and walls and they can be painted any colour without detracting from their acoustic qualities. With all these practical attributes it is small wonder that Paxtiles are being specified on an ever increasing scale by modern architects.

✳ **The sound-absorbing holes in Paxtiles penetrate THROUGH the asbestos millboard face INTO the asbestos fibre backing.**

Newalls (Reg'd brand) **PAXTILES**

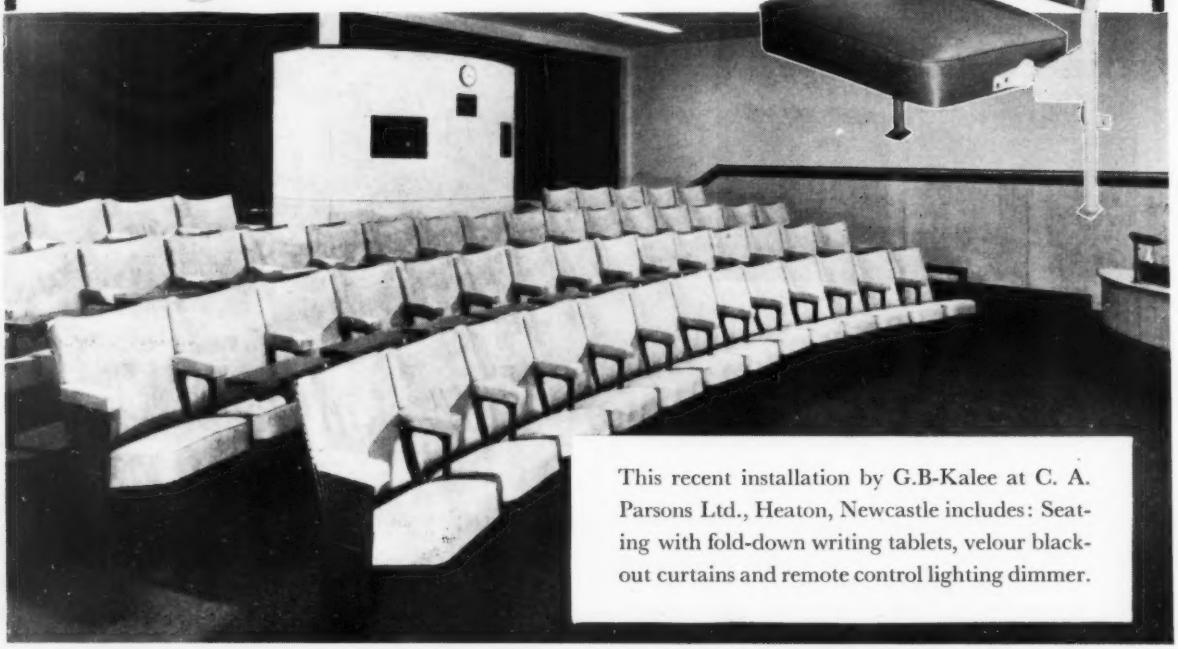
**NEWALLS INSULATION CO. LTD.** *Head Office :* **WASHINGTON, CO. DURHAM**
*A member of the* TURNER & NEWALL ORGANISATION
*Offices and Depots at :* LONDON, GLASGOW, MANCHESTER, NEWCASTLE UPON TYNE, BIRMINGHAM, BELFAST, BRISTOL & CARDIFF.
*Agents and Vendors in most markets abroad*



# GAUMONT-KALEE
## LECTURE THEATRE SEATING FOR INDUSTRY AND EDUCATION

Two of the chairs available in the Gaumont-Kalee range. Modifications can be made to meet individual requirements.





This recent installation by G.B-Kalee at C. A. Parsons Ltd., Heaton, Newcastle includes: Seating with fold-down writing tablets, velour black-out curtains and remote control lighting dimmer.

**100% functional designs · Superbly Comfortable**
**Easy to keep clean · Pleasing to the eye**

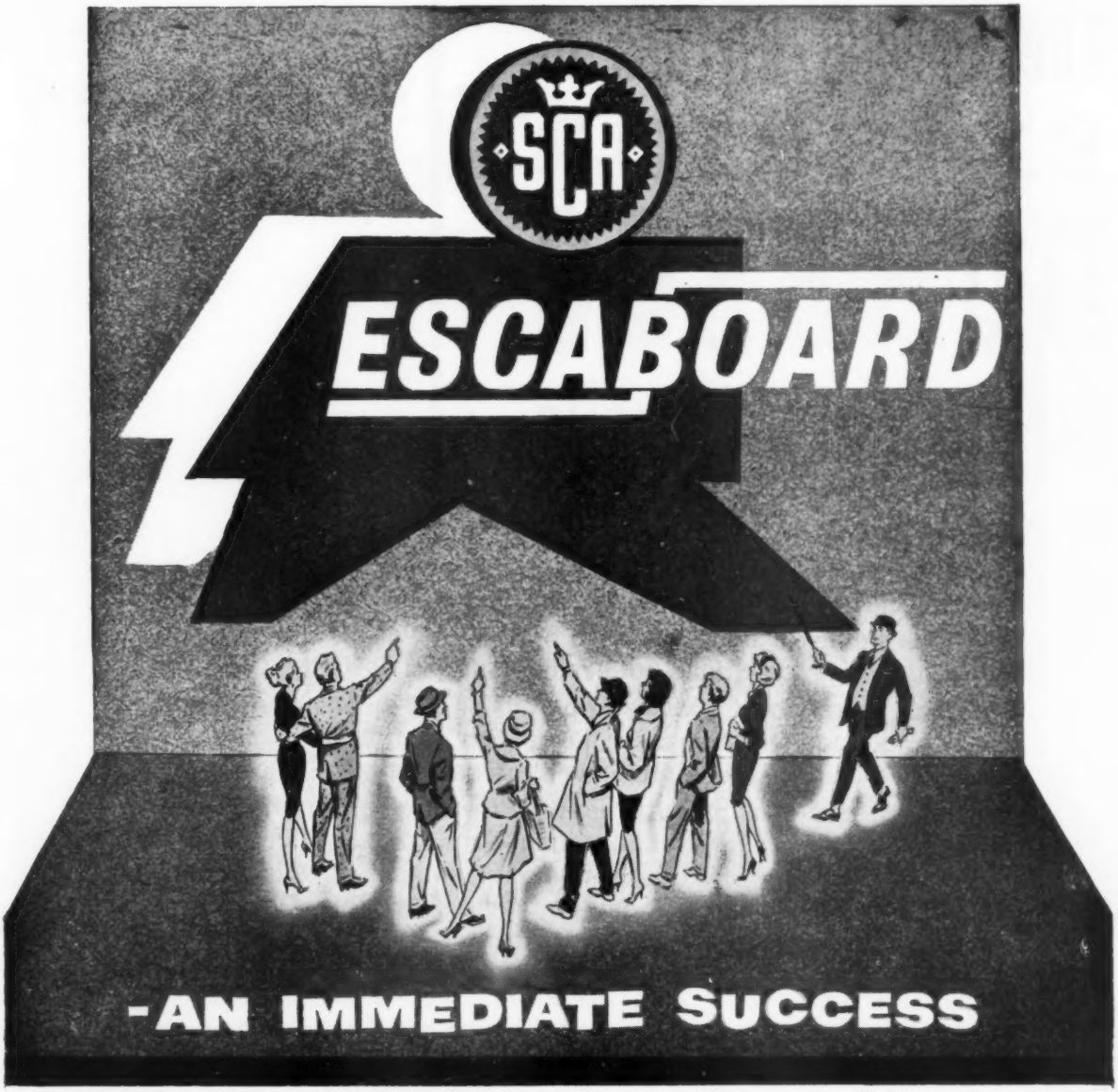
G.B-Kalee manufacture an extensive range of seating for all lecture theatre requirements—designed to create a comfortable, relaxed atmosphere for study and concentration. Models are available with tip-up writing tablets and a wide choice of upholstery, covering materials and woodwork finishes.

Write for illustrated lists of seating, electrically operated chalkboard/screen units, cine and slide projectors and other modern visual aid equipment.

**RANK PRECISION INDUSTRIES LTD**
GB-KALEE DIVISION · WOODGER ROAD, LONDON W.12 TEL: SHEPHERDS BUSH 2050

By appointment to Her Majesty the Queen
Cinematograph Equipment Manufacturers

**BRANCHES:** BELFAST · BIRMINGHAM · CARDIFF · GLASGOW · LEEDS · LONDON · LIVERPOOL · MANCHESTER · NEWCASTLE




## NO FILLING! NO SEALING! NO PRIMING!

Escaboard has taken a big step forward . . . out of the range of ordinary hardboards and into a class by itself. Recently introduced from Sweden, its revolutionary new features have won for Escaboard immediate and widespread favour.

### SAVES TIME...SAVES PAINT

Specially made with an unusually smooth, hard surface, Escaboard needs far less paint and gives better coverage. Cuts painting, varnishing and wax polishing time in half.

### CAN BE USED FOR FLOORING

The very hard and durable surface of Escaboard makes it ideal for floor tiles or panels, as carpet surrounds, etc. Clear varnish or wax polish brings out its full, natural colour and preserves its beauty.

### ESCABOARD OFFERS NEW SCOPE

Escaboard has been found ideal for silk-screen printing and a host of other applications normally considered to be well outside the scope of ordinary hardboard.

Manufactured by:
SVENSKA CELLULOSA AB
**FIBREBOARDS DIVISION**
SUNDSVALL · SWEDEN

Sole selling agents for U.K. and Eire: **MARTIN OLSSON (FIBREBOARDS) LTD · MELBOURNE HOUSE · ALDWYCH · LONDON W.C.2**

# The Special Virtues of EXTERIOR DURESCO for all outside walls

**EXTERIOR DURESCO** has been specially formulated to give long life on all outside walls. It is not affected by extremes of cold or heat and it maintains its colour throughout its long life in wet or exposed positions.

**EXTERIOR DURESCO** does not flake or scale. It gives a smooth finish and in consequence it does not easily retain dirt or dust.

**EXTERIOR DURESCO** is quickly prepared for use and is easily applied. It does not clog brushes and has a very high 'spread and cover' power. Two coats will obliterate even the darkest base colour.

**EXTERIOR DURESCO** is manufactured by the originators of this type of paint and has been successfully employed in large and small building projects all over the world under the most testing of climatic conditions . . . a guarantee that the skill and craftsmanship of the Decorator will be fully supported.

## THE OUTDOOR PROBLEM

The 'Outdoor Problem' has been our especial study for many years. In support of Exterior Duresco, we have perfected Duresco Clear Sealer and Charlton A.R. Primer for use with particular surfaces; and for waterproofing outside walls there is now WATERSHED and for outside timber (Red Cedar Wood particularly) there is WATERTITE.

*For full details of this superb range of decorative materials which will be gladly sent on request, please write or telephone to:—*

THE TECHNICAL ADVISORY SERVICE

**DURESCO**

**PRODUCTS LIMITED**

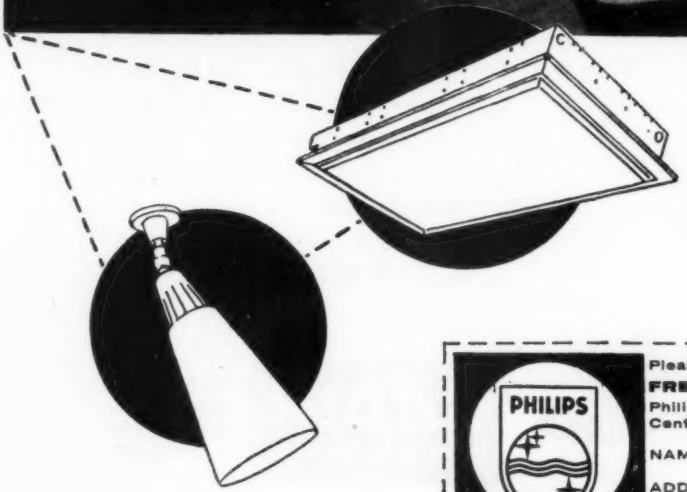
LONDON: CHARLTON, S.E.7. GREenwich 0034/5/6
MANCHESTER: 65 GREAT DUCIE STREET. DEAnsgate 3161
NEWPORT, MON: CLARENCE WHARF, NEWport 58272

WHATEVER YOUR BUSINESS . . .

# PHILIPS PUT IT IN A BETTER LIGHT



West End Overseas Branch, Midland Bank, Piccadilly, London.



Planned lighting is more attractive, easier on the eyes, and far superior for any form of displays. And there's an added advantage offered by a lighting plan from Philips . . . it's free!

Philips Lighting Design Service provides you with individual advice on the exact lighting for any purpose. It puts at your disposal a team of expert lighting engineers and a fully-qualified architect—all this without charge or obligation.

Set the wheels in motion now: post the attached coupon to Philips.

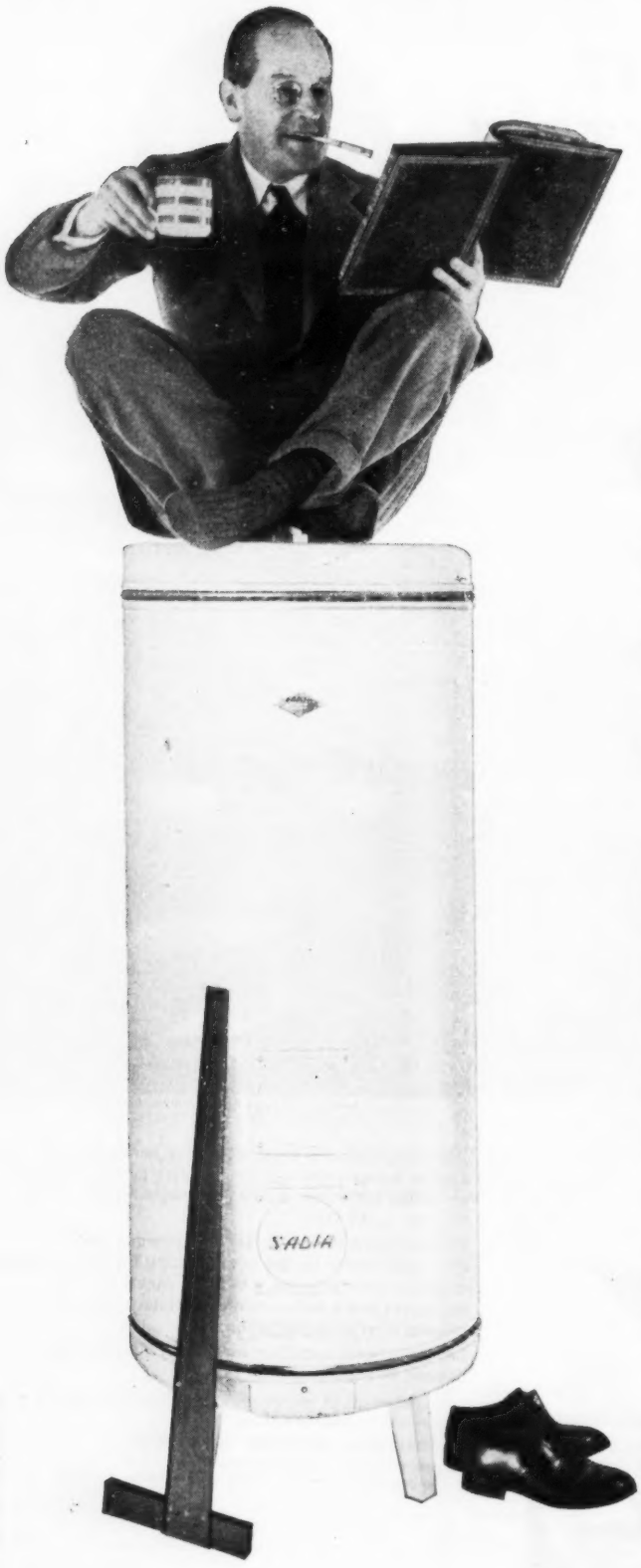
Please send me full details of your
**FREE LIGHTING DESIGN SERVICE**
Philips Electrical Ltd., Lighting Division,
Century House, Shaftesbury Avenue, London, W.C.2

NAME.....

ADDRESS.....

.....AJ.2

**PHILIPS FREE LIGHTING DESIGN SERVICE**




# SADIA

## gives you more time to play with

From whatever angle you look at it, hot water by Sadia is the simplest, most economical system. To the *architect,* it means far easier planning and installation. No provision has to be made for flues, or boilers, or fuel stores. Pipe work is reduced to a minimum. And there's a standard Sadia model to suit almost every hot water need—from the smallest 2·2-gallon sink units to giant 120-gallon industrial models. To the *client*, hot water by Sadia means no dirt, no work, no maintenance, greater reliability and greater economy. Sadia water heaters are completely automatic and built to the most exacting specifications—many installed over 25 years ago still give perfect service.

SADIA
HOT WATER BY ELECTRICITY

AIDAS ELECTRIC LTD.
SADIA WORKS
ROWDELL ROAD
NORTHOLT, MIDDLESEX

**Specialists in hot water by Electricity since 1923**



# fireclay

SANITARY FIRECLAY
TECHNICAL BUREAU
57 GREAT GEORGE ST. LEEDS 1

*A fully illustrated booklet, published in the interest of more and better hygiene and sanitation is available on request.*

## when hygiene is vital

The world has become hygiene-conscious. Perhaps not before it is time. Never before in history has hygiene and the part it has to play in safeguarding the health and welfare of the people been recognised as it is today. In the modern hospital, hygiene is vital for obvious reasons. Nor can it be regarded as of lesser importance in factories, offices, hotels, stores, restaurants or public buildings. In this connection there is a growing awareness that sanitary installations should be up-to-date and practical in design, really hygienic and manufactured from the finest sanitary ware obtainable. In short, Ceramic **Glazed Fireclay**. Why? Because of its strength, with its smooth, hard, gleaming and easily cleaned ceramic glaze. Because of its sturdiness, its solidity and dependability, its resistance to extremes of heat and cold. Because it resists staining, scratching and abrasion, acids and alkalis. When hygiene is vital, specify Ceramic **Glazed Fireclay.**



SPECIFY SANITARY FIRECLAY WARE FOR **PERMANENT** SATISFACTION

from LEISURE a self-contained

# SHOWER CUBICLE



**a space-saving private bathroom within the reach of all your customers!**

The Leisure Shower Cubicle has been designed to stand anywhere without structural alterations of any kind. It is particularly useful in flatlets, where space is so precious. What does the Leisure Shower Cubicle offer? An attractive shower curtain seals off the gleaming white and black enamel interior from the outside room. The spotlight glass panel, set into the roof, provides plenty of light. A twist of the anti-scald mixer tap gives instant hot or cold showers. The chrome flexible pipe can be transferred to the washbasin, which together with the mirror and glass holder is an optional accessory. The Leisure Shower Cubicle is soundly constructed in pressed steel, and is easy to install. Prices have been kept to a minimum so that all can benefit from this unique piece of home equipment. Display the Shower Cubicle prominently in your showroom—and get set for brisk sales this summer!

PRICES FROM £43.4.6 *(undrilled)*
TO £58.3.3 *(complete with all accessories)*

THE LEISURE SHOWER CUBICLE IS MADE BY LEISURE KITCHEN EQUIPMENT LTD
NOTTINGHAM ROAD · LONG EATON · Nr NOTTINGHAM • *A DIVISION OF* ALLIED IRONFOUNDERS



*High School for Girls, Broadlands, Hereford*
*County Architect: W. Usher, A.R.I.B.A. Flooring Specialists: James Beattie Ltd., Wolverhampton.*

# School days are busy days

All over Britain new schools are being erected and much thought and care is being devoted to provide our children with gay hygienic surroundings.

Armstrong Linoleum Flooring, manufactured in tile or sheet form, is available in a wide range of colours with plain or marble effects. In tile form it can be laid to any specified design. It is extremely durable, withstands the heaviest traffic, and is easy to keep clean and maintain. An example of the tasteful use of Armstrong Linoleum can be seen in the above photograph of the High School for Girls at Broadlands, Hereford. Armstrong Linoleum Flooring is equally suitable for public buildings, offices, shops and homes. Full details on request.

**Armstrong LINOLEUM Flooring**

*Makers of ACCOTILE, ACCOFLEX and CORK TILE*

ARMSTRONG CORK COMPANY LTD. BUSH HOUSE, ALDWYCH, LONDON, W.C.2. COVent Garden 1101

386

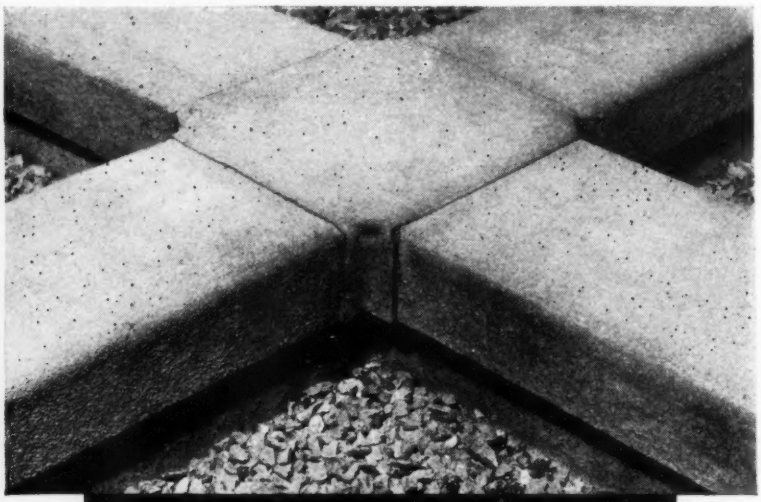
# this was a problem

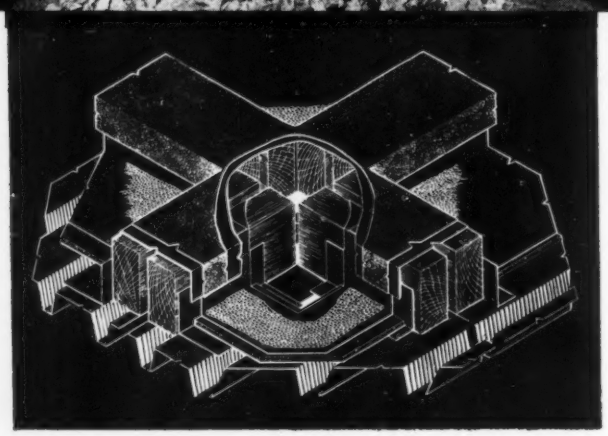
**This detail illustrates one of the many problems which arise when provision for expansion in the roof is necessary.**

**In this case the "Bitumetal" roof structure had to be designed to allow expansion movement longitudinally as well as laterally, and the main problem was to design a watertight detail at the mid point junction of the expansion lines.**

R. WARNER & CO. LTD., EASTLEIGH, HANTS. *Architects: Edmund D. Mills & Partners*

# until BRIGGS found the answer*





*

**The detail agreed for the straight runs of expansion joint was a fairly standard design of timber curb with a sliding aluminium capping angle dressed with roofing felt. A special capping section, to allow four way movement at the central junction, was designed and supplied by the Briggs Technical Design Service. The finished detail provided a neat effective joint, allowing for expansion and contraction, without any loss of waterproofing efficiency.**

*The resources, technical knowledge and experience of the Briggs Organisation are at the disposal of every Architect and Engineer. Consult our nearest area office for further details of Briggs Technical Design Service.*



**BRIGGS** *the people to see about roofing*

**WILLIAM BRIGGS & SONS LIMITED**

VAUXHALL GROVE, LONDON, S.W.8 REGD. OFFICE: DUNDEE

AREA OFFICES: ABERDEEN · BELFAST · BRADFORD · BRISTOL · CARDIFF · DUBLIN EDINBURGH · GLASGOW · LEICESTER · LIVERPOOL · NEWCASTLE · NORWICH

I·C·I CHOSE

# 'Aristocrat' —the door of dignity and dependability





FOR THEIR NEW OFFICE BLOCK AT BILLINGHAM, CO. DURHAM

*Main Contractors: John Laing & Son Ltd.*

Hundreds of Hills 'Aristocrat' flush doors lend additional harmony and grace to this attractively spacious building. These fine doors in a wide range of veneers and matching edge strips, with the exclusive Hills Kreibord core, add dignity to any major project. They are manufactured in the dimensions and veneers to your specification.

Your important project deserves Hills 'Aristocrat' flush doors.

*Photographs by courtesy of I.C.I.*

Hills

ARISTOCRAT

FLUSH DOORS

*For more information write to:—*

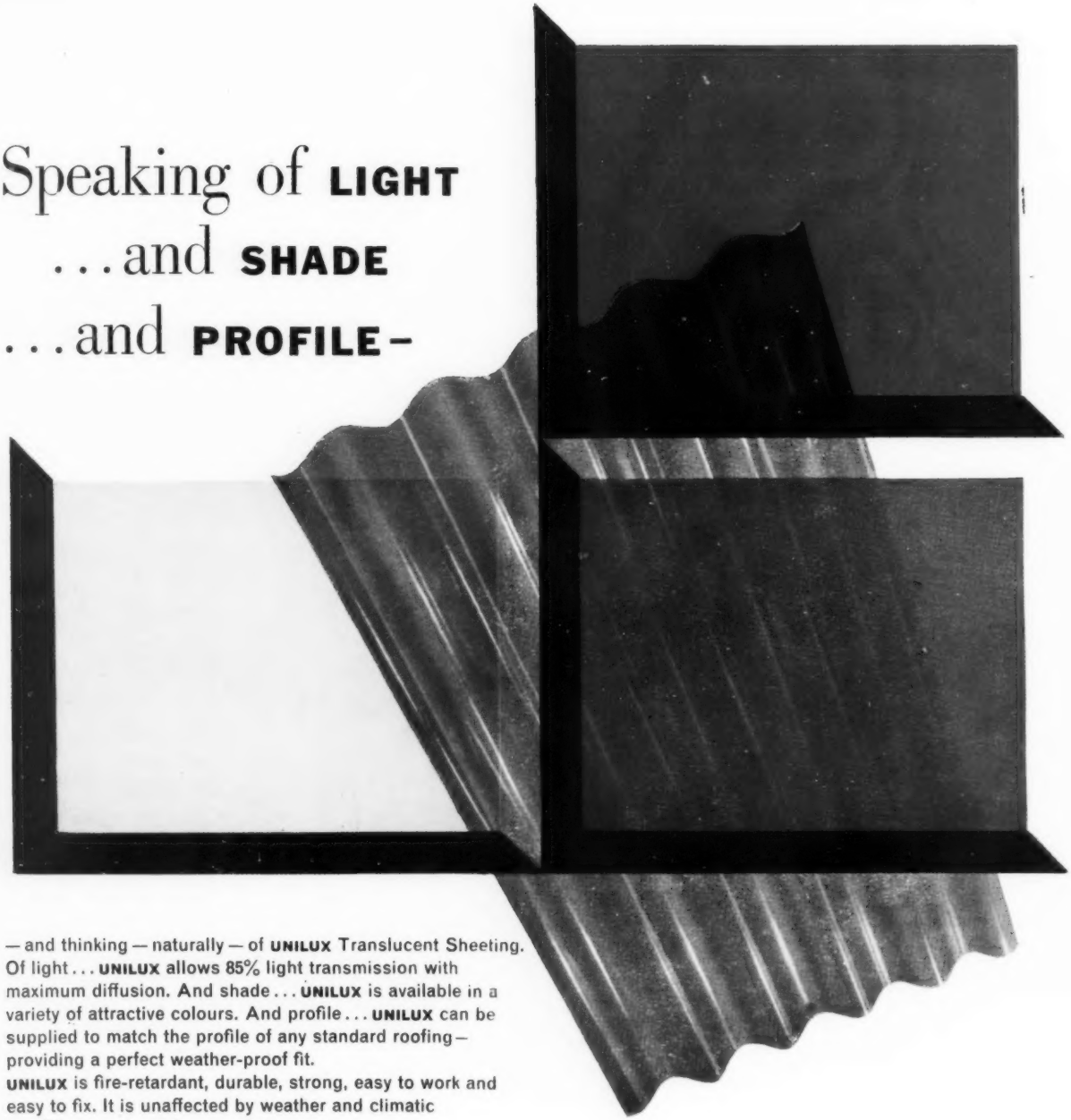
F. HILLS & SONS LIMITED NORTON ROAD STOCKTON-ON-TEES • Telephone: 67141

LONDON OFFICE: WINDSOR HOUSE KINGSWAY LONDON WC2 • Telephone: CHAncery 9251

Telex in operation at both offices

P4605

# Speaking of **LIGHT** ...and **SHADE** ...and **PROFILE**–



– and thinking – naturally – of **UNILUX** Translucent Sheeting. Of light... **UNILUX** allows 85% light transmission with maximum diffusion. And shade... **UNILUX** is available in a variety of attractive colours. And profile... **UNILUX** can be supplied to match the profile of any standard roofing – providing a perfect weather-proof fit.
**UNILUX** is fire-retardant, durable, strong, easy to work and easy to fix. It is unaffected by weather and climatic conditions and needs no maintenance.

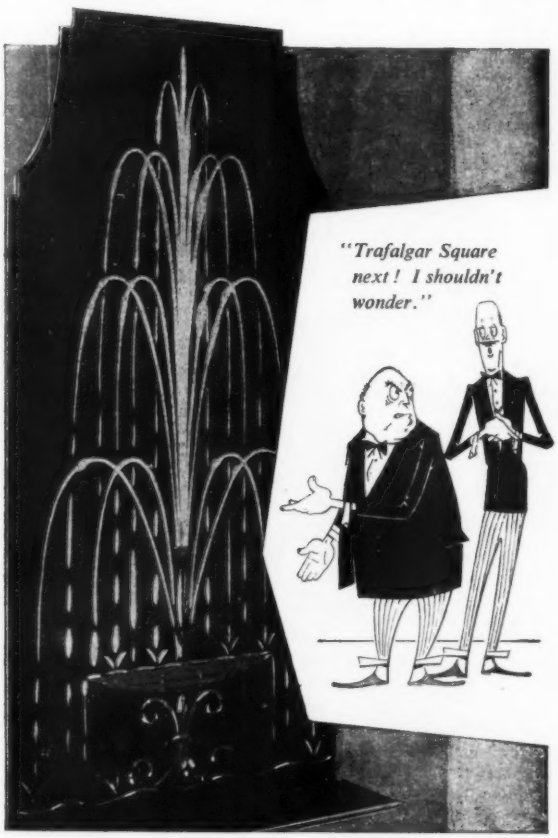
**UNILUX** is made by a member-company of the U.A.M. Group – a name synonymous with "better building". The "**U.A.M. GROUP INFORMATION BULLETIN**" is published every two months to keep you informed of the Group's activities. May we add your name to our Mailing List?

**Unilux** the best in Translucent Sheeting

U.A.M. PLASTICS LIMITED · TOLPITS · WATFORD · HERTFORDSHIRE · Tel: WATFORD 34551

A Member of the U A M Group of Companies

# ...ARTISTRY IN GLASS by REED MILLICAN




*An example of difficult brilliant-cutting combined with colour-silvering, illuminated from behind.*

* Specialists in:
DECORATIVE GLASS (including the Reed, Millican 4-colour Silvering Process); ALL FORMS OF GLAZING; THE DESIGN AND MANUFACTURE OF STAINED GLASS AND LEADED LIGHTS; VITROLITE FIXING FOR WALLS AND SHOP FRONTS; ARMOUR-PLATE DOORS AND DOOR SURROUNDS.

**REED, MILLICAN & CO., LTD.**
**Artists and Craftsmen in Glass since 1847.**
MARKET STREET, NEWCASTLE UPON TYNE, 1.
*Telephone: Newcastle 2-8383*



AJ

**The Architects' Journal**

No. 3401. Vol. 131. June 23, 1960

**9-13 Queen Anne's Gate, London, S.W.1. Whitehall 0611**
***Subscription rates:*** **post paid, inland £2 15s. 0d. per annum; abroad, £3 10s. 0d. per annum. Single copies, 1s. post paid, 1s. 6d. Special numbers are included in subscriptions; single copies, 2s.; post paid, 2s. 6d. Back numbers more than 12 months old (when available), double price. Half-yearly volumes can be bound complete with index in cloth cases for £1 17s. 6d.; carriage 2s. extra.**


DEFINITELY ARCHITECTURE

## *R.I.B.A. Diary*

Very few conference members read the conference papers in advance and, one suspects, even fewer of the profession at large. But the reports on pages 948-50 indicate the great efforts made by the participants: efforts which are, in fact, literally "taken as read," because the papers are only summarized at the actual conference. In the normal manner the conference began with a reception by the Allied Society: the Manchester President, Professor R. A. Cordingley, with Mr. and Mrs. Basil Spence, receiving guests in Charles Barry's only Greek building, the Royal Manchester Institution, now the City Art Gallery, with half its ground floor windows displaying notices saying: "Morning Coffee." "Restaurant." "Lunch."

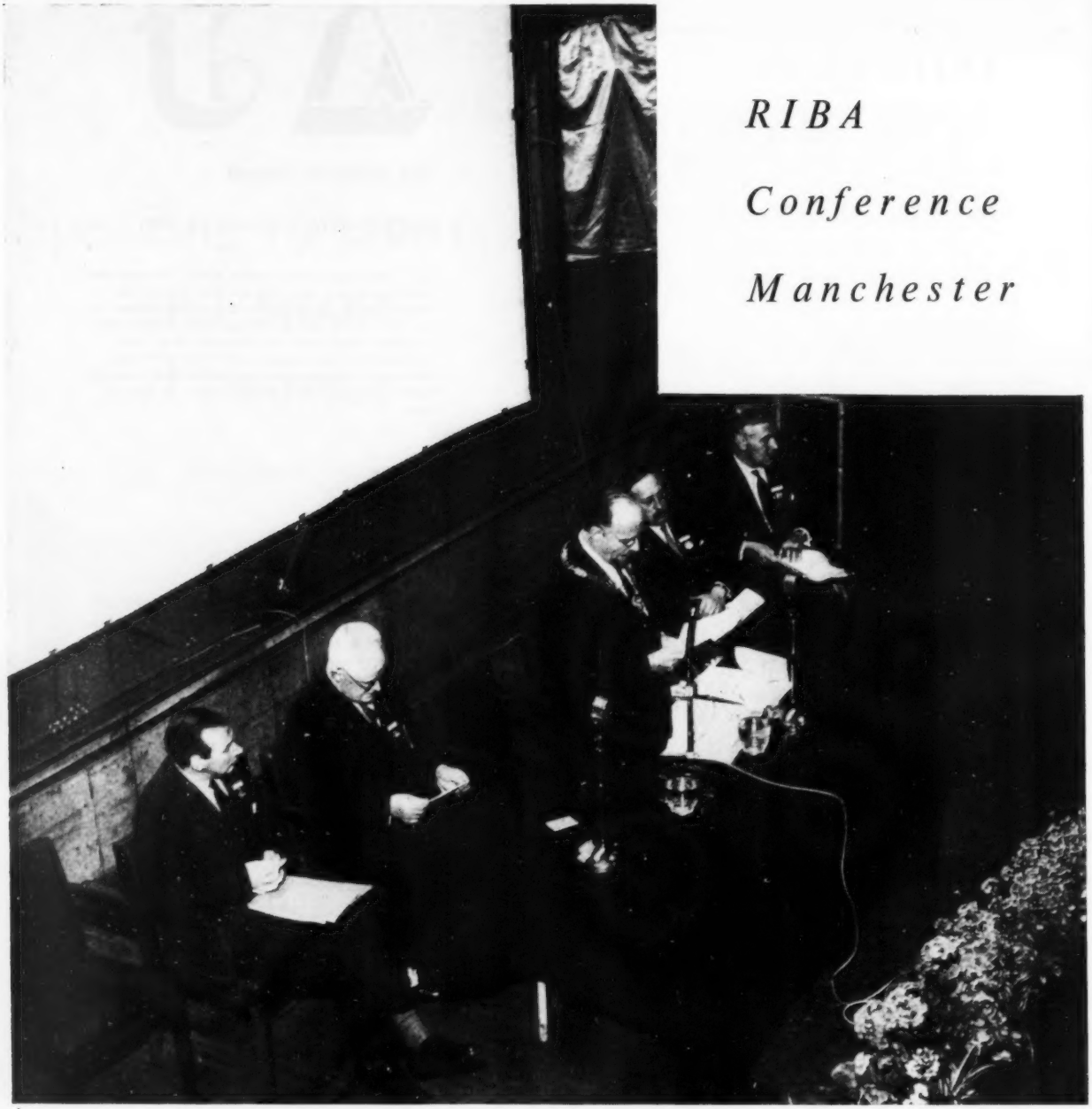
*

Half an hour earlier the Press had been marshalled to meet all the Conference speakers and personalities informally and Basil Spence succinctly said who was who (sample: "Maxwell Fry, a pioneer of the modern movement. As far as modern architecture is concerned, our daddy.") And William Allen announced that in addition to the usual procedure there would be a panel of local government administrators to quiz on Friday morning.

*

The Art Gallery has a fascinating assortment of paintings, the best-known being, of course, the collection of Pre-Raphaelites. Only those of exceptional single-mindedness managed to penetrate so far as the paintings, however, because the path was blocked by scores of architects welcoming each other for the first time since Cardiff last year, and by a simple but very neatly displayed exhibition of Manchester architecture and the work of local architects. The historical section was rather undercaptioned, considering the richness of the

# *RIBA Conference Manchester*



Above: Basil Spence addressing the inaugural meeting in the Free Trade Hall on June 16. Also on the platform (left to right) are Arthur Ling, Prof. R. A. Cordingley, Hugh Wilson and Hubert Bennett.

Below: left, Basil Spence; centre Arthur Ling; right Mrs. and Mr. Haydn Smith with Prof. Cordingley.







material, but was well baited with the meticulously rendered elevations and perspectives of the Victorians—Waterhouse, Worthington and so forth—and the quaintly delightful *art nouveau* of Edgar Wood, the centenary of whose birth is celebrated with a short article in the conference handbook, a neat piece of scholarly one-upmanship.

*

The bulk of the exhibition was, of course, of contemporary work. Six years ago, about the only new building in or near Manchester worth visiting was Cruickshank and Seward's offices for Renolds Chains. Now the position has markedly improved, partly, it must be admitted, because architects from outside Manchester have been employed, but also to a certain extent through the efforts of local firms. An example of this is J. W. Beaumont & Sons, who designed the Electrical Engineering building for Manchester University which became the butt of every passing critic a few years ago because a three-storey wing on one side of its symmetrical façade was balanced by three rows of windows in a wing on the other which lit one large hall. The same firm's new project for a refectory building, with 15-storey tower rising from low three- and two-storey blocks, and carried out in a simple frame and panel, is a model of its kind, only slightly marred by such dubious details as a sculptured panel and an arbitrarily sited roof terrace.

*

Manchester University has one of the worst reputations amongst British universities for its disregard for planning and its low standard of design, unbefitting the fourth largest university. However, it has now charged George Grenfell Baines to design its extension at Fallowfield, and a block model in the exhibition shows a promising layout of interlocking four-, three- and two-storey courts ranged along a broad, stepped mall which acts as a central spine to the composition. To one side is the usual 18-storey tower. The only small failure is a lost group of patio staff houses standing oddly unrelated to the whole in one corner of the site.

Cruickshank and Seward have also designed a modern examination and lecture building for the university which is a welcome contrast to the dull works surrounding it. It is exhibited in a model with other work—senior engineering buildings—by Harry S. Fairhurst which amply demonstrates the university policy of developing each site as a self-contained entity.

*

The new railway stations, in particular one at Burnage, the work of W. R. Headley of the London Midland Region, represent another design revolution which is effectively changing the Manchester area, and one or two county schools—notably a very polished secondary school at Bradford by Scherrer and Hicks—partially compensate for the extraordinary dullness of the housing—public or private—exhibited. Here is one building type in which Manchester and Lancashire have still a long way to go.

C.B.

# The Editors

## MANCHESTER CONFERENCE: SUCCESS OR FAILURE?

"THIS conference has been a dead loss to me: I have learnt nothing." This was the savage comment, in mid-session, of an architect pre-eminent in designing for one form of speculative development. Was it fair? Yes, from the single viewpoint of getting more information on urban renewal.

As propaganda for the architect's viewpoint, however, it was the greatest success the RIBA has ever enjoyed. The majority of the daily newspapers covered the conference and a few citizens must be becoming aware of some of the simple points the architects were making: there is no co-ordination between the MOHLG, the BOT and the MOT; the future shape of our cities depends on *vital* studies by the MOT; no worthwhile city will develop (or has ever developed?) without comprehensive development and this means large key areas, at least, being in one comprehensive ownership.

In a conference confined to two morning sessions not much more can be expected. If the above points can be driven home to the whole population, the Government whatever its political colour, will have to think hard.

Future conferences are likely to be longer and as much concerned with exchanging information as with propaganda (Coventry, in two years time will show the way). But Manchester has brought the post-war series to a fitting close in a most efficient, well-presented manner.

## WHY NOT ARCHITECTURAL RESEARCH?

THE publication of the annual report of the Research Council of D.S.I.R.* enables us to see where building research stands in relation to the total research effort of the country. The Treasury grant for building research last year showed an increase of 3 per cent. over the year before, but the total grant for research for all purposes showed an increase of 6.5 per cent., which means that building is getting a smaller slice of the cake.

In their Report the Council enumerate the major purposes of their Research Stations and among these is " to pay special regard to the research needs of industries that lack an adequate scientific background." As though in furtherance of this purpose they have during the past year asked their Economics Committee to start a series of detailed enquiries " into the research and development needs of important industries which, they believe, may be attracting too small a share of the national resources available for technological development." You might have thought that those who wrote these descriptions had the building industry particularly in mind; for, of the whole run of our industries, none, surely, has a bigger annual turnover, and a worse scientific background. It is rather disappointing, therefore, that the committee (urged

* H.M.S.O. 4s. 6d.

doubtless by thoughts of the export trade) has given its first attention to the machine tool industry—one which, to the outsider, seems technically very highly developed.

One reason building enjoys such a poor academic and scientific standing is that it is such an " impure " subject: meaning, by this, that it does not break down into neat compartments of knowledge of the sort which is epitomized (to quote at random from last year's special research grants) by such phrases as " implanted electrode studies of the bird brain." Those with a scientific training tend to shrink from subjects which must be advanced along a broad front. For this reason it is interesting to notice that DSIR have during the past year embarked on a new venture in what are called the " human sciences " as distinct from " science and technology." Up to now the awards made under this head have been mainly for managerial subjects, though there has been one (" The Application of Operational Research to Local Government Housing Maintenance ") which impinges on building. Clearly it is a broad category and we suggest that it serve as an umbrella for studies in building uses and town planning. Somehow or other, modern architecture and town planning have never yet received the sociological basis which their theory supposes. We deplore (and rightly) the insufficiency of *building* research, but in reality far more harm is done by the insufficiency, or rather by the almost total lack, of *planning* research. It is a pity to build inefficiently: it is much worse to conceive the wrong kind of building and to put it in the wrong place.




NATURE RAMBLES

I was interested to read that the new physics building at Liverpool University had its planning " directed by the late Professor W. B. Skinner and Mr. A. M. Hudson Davies, the chairman of the Building Committee." The quotation comes from the scientific journal, *Nature*, and I'm not really surprised that Basil Spence's name was left out. This is the third time I've seen university laboratories described in that journal without proper credits being given to the architects. Maybe scientists are the sort of arrogant clients who know exactly how to design buildings, and employ architects simply to do the drawings.

*

I wonder why, incidentally, a journal of this quality should publish such superficial descriptions of laboratories. Those I have read contain nothing about electrical loading, air change rates, absorption co-efficients, reverberation periods, illumination levels—or, in fact, any of the information that would help a scientist to brief an architect for similar work. I suggest that *Nature* should get architects to do their own write-ups, so they can present their buildings as what they are—thoughtfully-contrived pieces of scientific apparatus.

A YORKER

My Yorkshire spy—chocolate round his mouth, Minster dust on his boots and the wind of Fylingdales in his hair—dropped in the other day to report on an exhibition opened by Sir Hugh Casson in the county capital. Four young architects and a layman with a passion for townscape staged a show indicating how local subtopian black spots could be cleared up. The group was helped by the Civic Trust, the local newspapers and the Institute of Advanced Architectural Studies, where the display was put on. I gather the criticisms made of lamentable official " improvements " in the city is unlikely to win the organizers any local work. I must say it is nice to hear there was at least one exhibition to celebrate Architecture Week which didn't have the slightest whiff of self-interest.

SAVE YOUR PFENNIGS

Gropius and Mies van der Rohe will be presidents of a Bauhaus Archive to be provided by the city of Darmstadt in the famous building by Olbrich, with Prince Ludwig of Hess as patron. The secretary—the man really in charge—is an art historian with a particular interest in the Bauhaus, whose records have been brought together from both sides of the Iron Curtain. How about a William Morris Archive? I suppose it is just as unlikely as one on Le Corbusier.

A PROPER PACKET

I'm glad to hear that an organization dealing with packaged building contracts is finding it difficult to get its various departments to co-operate, and is even suggesting there should be an " independent assessor " on all sites. " It has not been possible," says the firm, " to decide yet what sort of qualification the man should have, but it is possible it might help if he were free-lance to prevent him becoming entangled in the team." Is it possible that someone realizes the architect is as essential to the builder as he is to the client?

BYE-BYE BY-ROADS

One of the joys of motoring is finding the jam-dodging routes the other chaps are too lazy to look for. That's why I agreed with the *Daily Mail's* attack on Mr. Marples' policy of divert-

ing holiday traffic through country by-roads. The *Mail* is rightly afraid that the motorist who "wants to refresh his soul with the sight of the inviolate village and the immemorial elms" will soon find instead "road-houses and restaurants, cafés and caravans, traffic lights, signs, notices—the rank growth of Subtopia."

AN AESTHETIC FUNCTIONALIST

Some excellent tips were given at the AA the other day by Dr. Davies, the chairman of the Regional Hospital Board which was behind the Swindon hospital, talking about wiles to get the truth out of doctors and to jolly them along the way to good architecture. First, put the doctor in a tizzy by asking him what medicine will be like in ten years' time. Second, sketch out a scheme that is too small so he can have the satisfaction of enlarging it. And third, if he insists on a gold knob solution (most do), confront him with the others and make them share the cake. Fourth, remember that as it takes seven to ten years to build a hospital some of your most troublesome colleagues will be dead before the job is complete.

*

Philip Powell, who also spoke, has the virtue uncommon among architects of being able to speak candidly about mistakes. There are not many mistakes at Swindon, but we need to know them just as we are getting down to a vast programme of hospital building. Among Mr. Powell's comments were the fact that block partitions with ordinary doors do not provide suitable soundproofing for consulting rooms; that hospital people are sensitive to sun penetration, so standards that are good enough for schools are not good enough for them, and that the intake of dirt on shoes is so great that the entrance hall should really be one big door-mat.

*

Mr. Powell gave the impression that he was more interested in getting an aesthetic advantage out of a functional problem than in solving the problem itself. But the chairman, John Weeks, was able to remind the audience of some of the user studies undertaken by the Nuffield architects and their colleagues—studies which have prevented us from building Mies-ian wards with Nightingale plans.

ASTRAGAL

# RIBA CONFERENCE 1960



*L. D. G. Thornley, senior lecturer, Manchester School of Architecture, with R. F. Jones, Manchester's oldest practising architect.*

**THURSDAY**

The conference opened formally with an address of welcome, as usual, by the Lord Mayor, Alderman Arthur Donovan. Presented in the usual homely mayoral style it contained more than usual sound sense. After expressing good wishes for the success of the conference, congratulating Basil Spence on his knighthood, deploring the effect of squalid streets on human lives and describing the sense of buoyancy he felt when he saw "where the art of architecture has been practised freely over the years," he modestly stated that although Manchester had ambitious plans he did not claim they had made great progress in rebuilding or in architecture. He deplored the fact that architects often had to compromise on their designs because of clients and committees resulting in a general levelling down of standards and taste.

President Basil Spence, having thanked and congratulated the Lord Mayor for his speech, then made a presentation of the Institute's Bronze Medal and certificate to Leonard Howitt, Manchester's city architect for the design of a crematorium and cemetery chapel and registrar's office at Blackley cemetery.

He also presented the Lord Mayor with a replica of the medal, representing the city of Manchester as building owners and gave a certificate to Ernest Seddon, of Messrs. G. & J. Seddon Ltd., the contractors.

Thanking the President, Mr. Howitt said: "I am proud to receive this medal on behalf of my department." . . . . "I hasten to pass on the credit to Mr. F. G. B. Roberts, my deputy; Mr. J. S. Marsh, the principal assistant architect; Mr. G. Carter, the group leader in charge of this project, and his assistants, Mr. F. Williams, and Mr. N. Stanley."

Basil Spence's opening speech earned him great applause and headlines in most national dailies. He said: "Our cities are the heart of our civilization. Our historic and architectural treasures bear witness to our ability to create towns and cities as beautiful and civilized as any in the world—Bath, Edinburgh, York, Chester, the Georgian terraces, our finest parks and streets continue to draw tourists from all over the world. But the greater part of our towns and cities are grim deserts of bricks and mortar, great areas of dereliction and subtopian wastes of semi-detached houses and bungaloid growths left by the industrialists of the 19th and the spec. builders of the 20th centuries.

"Our precious land, so beautiful and so small, has become a casino for the speculators, who are now clamouring to build in the green belts that surround our cities—less, one suspects, because they really want to solve the housing problem, than because there is a fortune to be made if the Minister of Housing and Local Government can be persuaded (and I hope he never will be) to relax his defences. Like the profiteers who corner the bread supply in a besieged city, the speculators are cornering the limited supply of building land in town and country and holding the community up to ransom. The money that should be going into better architecture and higher standards is being taken by people who have contributed nothing to the building process. This has grown to the dimensions of a public scandal, and threatens to make good planning and city reconstruction prohibitively expensive. I sympathize with builders who find it increasingly difficult to build, but we must harness their skill and resources to the building of new towns and the renewal of old ones, and prevent the continued outward sprawl over the countryside.

"The problem of rebuilding our cities bristles with difficulties. We need new powers and new sources of money. We need to raise our own standard of proficiency, and to apply some of our greatest talents to the task. But, if the nation decides that the job be done, I am sure that we in all the professions concerned can do it. But I must add, that if the opportunity is not taken now, it will not recur in our time. This is the problem that our conference is going to discuss today and tomorrow."

HUBERT BENNETT then began to summarize the first of the three conference papers which had, of course, already been circulated to members, by showing a series of slides. He then said: "Until we put down on paper in this country the road pattern of the future we shall get nowhere.

"We get at County Hall almost 5,000 planning applications every year and many thousands of them bring traffic problems in their train. These problems cannot be solved satisfactorily because it is impossible to deal with traffic problems in isolation.

"At the present we are spending as much as £6 millions a year on what can only really be called road improvement schemes. I don't want to say that road improvements aren't necessary, but they are not the answer. The road pattern of the future has already been designed and accepted in some capital cities—Stockholm, Copenhagen, and West Berlin, for example—and I think that everybody concerned here has a responsibility to see that this work is done immediately.

"It appears this country needs 1,900 miles of motorways, but that is only one per cent. of the road length of this country. This gives some idea of the size of the problem.

"In dealing with traffic congestion at the centre, the information I gather from other

## RIBA CONFERENCE 1960



*James B. Harris and Frank I. Jenkins, lecturers, Manchester School of Architecture.*

cities in the world is that our plot ratios are too high. Unless a proper ratio is observed we are just going to carry on getting traffic congestion. Plot ratios will have to be examined really seriously. The other point on congestion is the long-term parker. Surely it is wrong today that a man can leave his car on the highway from nine-to-five.

" Finally, turning to the thousands of acres that require redevelopment. What an opportunity they present for comprehensive redevelopment. The opportunities are overwhelming."

**Hugh Wilson**, architect to Cumbernauld new town, said: " I do not apologise for coming back to this point about traffic, because that is the principal lesson we have tried to bring out in our papers. Everywhere one reads about the problem of the motor car and one also reads about various makeshift measures of dealing with the problem. The figures of car ownership are rising year by year and at the moment congestion of traffic in our streets has increased to the point that any special event brings chaos to the roads of this country.

" On top of all that we have got the recently announced increase in the productivity of the car manufacturers and one can only assume that these increases are being arranged with Government encouragement because Government departments have been concerned in the selection of sites for the new car factories, and this can only add to our problem.

" No-one would ever dream of building a railway system without stations and signals and well-surveyed tracks. But it doesn't happen with road transport. No-one thinks about where the cars are going to go when the cars are being made.

" I would like to see the car manufacturers take the lead and set aside money to establish a research centre to learn something about the motor car and its use.

" In most of the towns we must recognise the right of the pedestrian; the places in the town are his, and this is one of the greatest facts of town life. If we destroy that we destroy our towns as places in which men can lead a civilised existence; the motor car must serve, but it must never be allowed to dominate. The two needs—of the motorist and the pedestrian—can only be satisfied by their separation, which must be achieved in all parts of the town, in the housing areas as well as the commercial and business centres.

" If I have devoted too much time to the question of the motor car it is because of the road problem facing us; we can do little in the field of urban renewal until it has been solved. One can praise the achievements of the Civic Trust, for example, but I feel very strongly that the cosmetic treatment of our streets is completely useless without tackling the problem of traffic. We have got to start dealing with the traffic problem as part of the general problem of town planning.

" We must have regard, as far as planning problems are concerned, to the advantages to be gained from a compact development, certainly in the centre of our cities. I think we should abandon the idea of neighbourhood units.

"No worthwhile research has been carried on in Government departments concerned with these problems. If we are to have worthwhile planning we must have a national planning policy. But at present what is happening? Where is Mr. Marples' study group we heard so much about last year?"

What will tomorrow's New Town be like? Hugh Wilson went on to give an outline of the future. It will lie near a motorway, and a conspicuous feature, appropriate for a car-owning democracy, will be the four-road traffic hierarchy. The town will be surrounded by an outer ring road which will be connected to the trunk road and to the main town road only by grade-separated junctions. The main town roads, in the form of radials or link roads, will have no frontage development, but serve only to carry traffic to the feeder roads (controlled junctions here) which again, with no buildings fronting them, serve the local development roads which give direct, or footpath, access to all the buildings. The inhabitants, in medium to high density housing (85 persons per acre average net residential density) will not be planned in neighbourhoods and will have footpath access to the linear town centre a mere 600 yards away. The centre will be a pedestrian precinct, with cars and warehousing at ground and/or basement level, and pedestrians on a first-floor deck. On, around, and piercing through the deck will be offices, flats, shops and public buildings, with multi-level access for servicing from below or from deck level. Except for the local corner shop, all shops—largely in the form of department and self-service stores—will be in the centre. Industry, once tidily zoned away in purple patches, will be allowed to be a foil amongst the housing provided it is silent and odourless.
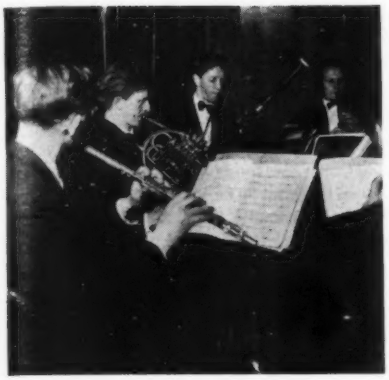
That, very baldly, is the pattern towards which Cumbernauld is moving and, it is rumoured, the pattern on which the LCC's new town would be based if they had the initiative to start one, hook having been abandoned.

Hugh Wilson's ideas for the urban renewal of existing towns are necessarily more cautious. He listed the three courses, of necessarily varying importance, to be pursued: redevelopment, rehabilitation and preservation. The key, of course, to replanning a town lies in organizing a pattern of communication with the maximum separation of pedestrians and vehicles. However, if cars were to be provided for on a scale similar to Cumbernauld (.7 cars per family) or even higher to 1.4 as the trend indicates, the preservation of historic centres would be impossible. The exclusion of vehicles would be the only alternative, here, to the destruction of the town.

**Arthur Ling** in the second Conference paper made points similar to Hugh Wilson's on the procedure for getting planning and urban renewal carried out. Ling pointed out that urban problems had not been properly analysed (no research) and administrative procedure, financial arrangements and technical approach were all inadequate. He stressed the need for large-scale ownership of land in order to carry out comprehensive development. If the development were to be by private enterprise, Ling recommended that a way be found to bring all private owners of land together in an area to form a consortium. Alternatively, he suggested that the freehold of all land in defined decaying areas be turned over to the local authority who would receive only a peppercorn rent from the present owners until a change in use created a higher value which would entitle the authority to charge a ground rent. Thus the community would benefit from the enhanced values created. For the development of areas, Arthur Ling recommended an architectural competition for the best scheme, which would then be competed for by potential developers. This way the best design would be built and purely financial considerations would no longer be the dominant issue.

After listing 35 important county boroughs without chief architects in charge of independent departments—boroughs executing an annual building programme of £100 million—Ling listed eleven points with which he suggested the growth of the motor car has rattled most architects into agreement:

1. Architecture must be on a large enough scale to solve the town's planning problems.
2. The zoning plan, so primitive in its objective, is useless in achieving comprehensive development.
3. Town planning controls are no substitute for comprehensive planning.
4. Road planning cannot be separated from city planning.
5. We will not tolerate motorways which tear the city apart and ignore human and aesthetic values.
6. The conception of development as a series of buildings along roads must be abandoned.
7. People are more important than vehicles. The motor car must be put in its place. Different levels can give segregation in city centres.
8. Complete freedom of movement for the man " on four wheels " is an unattainable ideal in existing cities. Public transport must play an increasingly important role.



*Lancashire Wind Quintet, horn played by Architect Mark Edge.*

9. The use of several levels opens up possibilities of combining buildings and changing uses vertically as well as horizontally. A city centre might become one large building with shops, concert hall, offices, etc., all approached from internal covered areas.

10. In housing areas the principle of vehicular and pedestrian separation should also apply. The centres of neighbourhoods should be free of traffic. Service roads without development should be planned on the peripheries with cul-de-sac approaches to interior areas for car servicing, parking or garaging.

11. Cities should be capable of expansion or change to meet new conditions. The radial city presents most difficulties and most of our old cities have this pattern.

Introducing his paper, Arthur Ling referred to the panoramic picture of the Manchester skyline which is part of the exhibition arranged by the Manchester Society of Architects in connection with the conference and commented "It is rather dramatic but rather disturbing. How people can come together in cities and create such a muddle is amazing. And this does not apply only to Manchester. This picture should be distributed to all those who have the responsibility for formulating town planning policy in this country—the Ministries, the civil servants, and local authorities. They should see this picture and not be allowed to forget it until they have approved the new techniques and procedures which are absolutley necessary if we are going to make any improvement in our towns.

"We have had special legislation for dealing with the problems caused by war; we need special legislation to deal with the problems caused by peacetime blight. We are at the beginning of an intense period of urban renewal and unless we sort out some of our problems now we shall find energies which might have been directed towards a drastic reshaping of our towns will have been wasted on a series of local improvements only.

"Local authorities have powers for organization and powers to carry out comprehensive development but they have no money to finance it. Private enterprise has the funds but no powers of organization to secure comprehensive redevelopment. One might think if the two were put together action might follow but existing legislation does not allow it.

"The 1947 Act attempted to solve the problem of compensation and betterment, but its financial provisions are now thoroughly dismantled. The action of local authorities in creating green belts to restrict the sprawl of the cities has forced up land values in the city centres. It has made investors look inwards rather than outwards for their sites but the community has made the position more difficult for itself because it has added value to the land it might wish to acquire for comprehensive development. The 1959 Act under which land has to be purchased at current market values by local authorities has put a new emphasis on the comprehensive development area procedure. Local authorities must have C.D.A. plans; if they don't, when they go to buy land they will have to pay more for it. This means that local authorities will have to look at the 1959 Act very carefully and extend the areas of comprehensive development.

"I have made the point that there are few if any examples of comprehensive development in the past which have been achieved without a comprehensive ownership of land. I am convinced you won't get comprehensive redevelopment without comprehensive ownership.

"If the main initiative in redevelopment is to be taken by private enterprise it is up to those who wish to redevelop the cities on this basis to answer the challenge as to how they can be redeveloped so as to express more than a desire to create profitable investment. They should really attempt to create a civilized environment as well.

"It is interesting to see where the larger funds for investment are coming from. It is mainly from the banks, insurance companies, contractors and to a lesser extent local authorities and public institutions. It seems unnecessary that if there are so few sources of investment, those responsible should compete among themselves. Is there not some way in which they could form a consortium of private developers and land owners so that they could solve problems themselves without help necessarily from the local authority?

"I suggest we need an urban renewal cabinet to bring together all the policy makers at Government level distributed amongst the various ministries and also to bring in representatives of independent bodies. Comprehensive planning requires comprehensive policy-making and it is no use having to go to various ministries for different purposes and hope we can secure a total design for an area.

"There should be established an urban renewal advisory committee. This would bring together representatives of all the contributors to urban renewal. There is already a central housing advisory committee but there is none for town planning. On this committee would sit representatives of the building industry, the technical professions, the banks, contractors and anyone else who ought to be in.

"An Urban Renewal Act should be promoted. The new towns with far less difficulties have an Act of their own."

## DISCUSSION

H. S. HOWGRAVE-GRAHAM, chief architect, Crawley New Town, started the discussion by asking whether the ratio of one car space per 250 sq. ft. of office space was high enough, and instanced such a block which cannot accommodate present demand for garaging, let alone future. He then slightly confused matters by saying that car parking provision on this scale will lead to vast wastage of land. He defended the neighbourhood unit, pleaded for large scale public, not private, ownership of land and pleaded for "some leadership" from the Ministry.

NOEL TWEDDELL (Civic Trust) also deplored the inadequacy of present legislation for solving the rebuilding problems, emphasized the split between traffic and planning responsibilities from Government level downwards and the difficulties before private enterprise because of the fragmentation of land ownership. He supported Arthur Ling in his request for an Urban Renewal Act, pointing out that new towns could never have been built in the way we are trying to rebuild our cities.

A. G. SHEPPARD FIDLER, city architect, Birmingham, said the profession should press for fuller participation in planning work in local authorities than is the case at present. "In Birmingham, for example, we have five areas covering about 1,400 acres and at the moment I suppose about one quarter has been rebuilt. It will be 10 to 15 years before this first batch of redevelopment areas will be anything like complete. Meanwhile surrounding the central area of the town are those areas of Victorian and Edwardian development which are going into decay. I was interested in the suggestion of Mr. Ling that local authorities should purchase these areas and put them out to private enterprise. This is a big job and we ought to get down to doing it right away and attempt to bring private enterprise back into the field of urban renewal.

"As far as the pressure on green belts is concerned there are 60,000 families in Birmingham wanting a house at the moment. The Government has refused a new town and people living in bad housing in large cities become rather impatient when they see so much building going on. The sooner we get down not to just designating one area after another every two or three years but tackling this great middle belt the sooner we will be able to give good homes to thousands of our citizens."

CLEEVE BARR, chief architect, MOHLG, concluded the morning's discussion with some general points which, though interesting, were not on the subject of the conference. He said that it was an excellent idea to invite Sir Keith Joseph, Parliamentary Secretary of the MOHLG, who was going "to answer all your awkward questions." He urged that the RIBA produce a policy on urban renewal, he wondered whether more permanent staff were not needed at the RIBA and said that the most important subject we have got to deal with in the next few years is architectural education.

## STUDY GROUP

Following the Thursday meeting a small meeting of about 60 members was held for about 45 minutes. This was called a study group. The group was clearly united by a strong sense of the urgency of the problem of urban renewal, and agreed on a twelve point programme, and the need to impress this on the Government.

## RIBA CONFERENCE 1960



*Dr. Stewart, Mrs. Stewart, Mrs. Holt, Mr. Holt, and Turner's "Pas de Calais."*

### SOCIAL EVENTS

The social side of the conference, as successful as any, took on this year a certain nostalgia derived from the thought that this is likely to prove the last RIBA conference to follow its well-established traditional pattern. For next year, the Institute will act as host to the IUA Congress in London and by 1962 a more streamlined working conference programme is likely to have emerged. This feeling of nostalgia was reinforced by the presence of Bill Spragg who, even in retirement, remained, perhaps, the only man at the conference whom everyone recognized.

For the garden party the organisers had chosen Heaton Park, the late eighteenth century mansion designed by James Wyatt which now commands a fine view of the outskirts of industrial Manchester and has been as thoroughly municipalized as any country house we have visited. With fitted link matting on both floors and staircase and tubular steel chairs added to those of 1772, its rooms were yet worth a visit for the surviving evidence of Wyatt's design. But this couldn't be said for the grounds where all traces of the rumoured participation of Capability Brown have been obliterated in a maze of little flower beds and rockeries. It would be ungracious to suggest that this interfered at all with members' enjoyment of their tea on the sunlit terrace to the background music of the City Police Band.

By contrast the Waterhouse town hall provided a magnificent setting for the civic reception. These rooms, maintained with a complete respect for all the details of their Gothic revivalism, and containing in the large hall the most perfectly integrated series of mural paintings by Ford Maddox Brown, were admired by everyone. The evening's programme included songs by Joan Crompton and William Morell as well as conjuring by Clifford Hough.

### FRIDAY

At the opening of the second day of the discussion Basil Spence introduced Sir Keith Joseph, Parliamentary Secretary of the Ministry of Housing and Local Government, barrister, and former director of the building firm of Bovis Ltd. The fact that Sir Keith had arrived at 4 a.m. and was "already geared up" and was suffering from a cold was calculated to soften the hardest heart in the audience, but Sir Keith needed no sympathy. His paper was extremely cleverly written, raising a number of interesting points while avoiding the key one: how to secure large areas of land for comprehensive redevelopment.

After pointing out that urban renewal is going on all the time, and that what and how it is renewed is what counts, he listed industrial redevelopment, new roads, new schools, open space and clean air as allies of urban renewal. The bulk of the renewal problem in towns was housing and he gave the following figures:

1950.—Of a total of 12m. dwellings, 5m., or 42 per cent. were built since 1919 and 900,000 were slums.

1960.—Of a total of 14m. dwellings, 7½m., or 52 per cent., were "modern" and 650,000 were slums.

1965.—15m. dwellings, 8½m. or 57 per cent. "modern" and 400,000 slums.

(*Note:* this suggests a drop in the country's annual housing programme to 250,000 or only 200,000 houses a year.) At the same time 100,000 dwellings will be modernized. He said that 3m. structurally sound dwellings merited modernizing and that would take 15 years to carry out. The limiting factor was the number of craftsmen available. Slum clearance needed the highest priority, and there was a need to build for the elderly. A bonus here was the better use of houses thus given up. Twenty-nine old people, for example, had recently vacated 59 bedrooms.

Pointing out that the average product of private enterprise house building is often not built or laid out by an architect, he suggested that these houses will not hold their value after the demand decreases (a point which will not worry builders but only, eventually, the owner-mugs who want to sell them). Referring to "twilight areas," Sir Keith said the problem of redevelopment was too big for local authorities. He suggested that private enterprise could help. Local authorities could co-operate by transferring tenants, "a partnership" between private and public enterprise.

He saw no reason why the taxpayer should help the ratepayer pay for the redevelopment of the most profitable areas of cities and said that most of the job of local authorities was traffic and open space, not ownership. "I don't think an architect should control the whole development of a centre: There is still as much need for a variety of design and of designers." It was the local authorities' job to settle two dimensional planning. On the traffic problem ("the individual car is welcome") he thought the Barbican scheme represented a major attack on the problem. He regretted that a number of local authorities had no architect. He ended by referring to the small research unit in the Ministry to study urban renewal which will carry out "research on the ground." He recognised the fertility of ideas caused by having administrators and architects in the team. But, "our resources are limited."

Then followed a "brains trust." The brains, including Sir Keith Joseph, were: W. G. Webb, deputy chief valuer of the LCC, Dr. A. H. Marshall, city treasurer, Coventry, and Dr. T. E. H. Williams, senior lecturer at Durham University, in the first course in traffic engineering in this country.

Sir Thomas Bennett then gave a masterly summing up, which also contained some shrewd directives.

### CONFERENCE DINNER

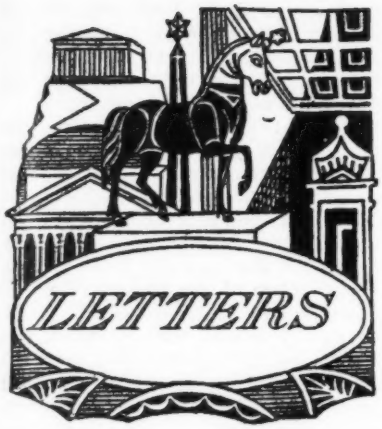
The success of this was considerably helped by having the speeches, usually six or more, reduced to four. The vice-chancellor of Manchester University, Professor W. MANSFIELD COOPER, proposed the health of the Royal Institute and the Allied Societies. He said that the differences which divide professions were fewer than the bonds which bind them. In reply BASIL SPENCE thanked the conference's hosts, the Manchester architects, and referred to his trip to Canada. The Canadian Institute will lean more and more on America, he said. There are differences between us and things we have got to iron out. He had visited Mies's Seagram building, "superb, crisp, clean, Cellophane wrapped—we can't touch it; let's not try,"—which had a "restaurant costing as much as Coventry Cathedral."

"Our whole problem," said SIR WILLIAM HOLFORD, proposing the health of the guests, "is to secure co-ordinated development . . . if architects can learn to combine with other architects and professions dare we hope our patrons will combine also?" He expressed his gratitude to the Minister of Housing and Local Government for taking such care over Piccadilly: the Minister recognized the important principles at stake and the eyes of the world were looking on to see what is happening. He ended by referring to absent friends: one or two who are "taking a holiday" is the phrase in South Africa. No one knows on what charges they are held as no charge is made. "If we have an opportunity to help them I hope you can support us."

*STOP PRESS: As we go to press, we hear from Sir William that the three architects have been released.*



*Delegates L. G. Raven and L. W. Barker.*




*Geoffrey L. Price*, A.R.I.B.A.

*John Bugden*, A.R.I.C.S.

*J. S. Allen*, F.R.I.B.A.

*Ewart B. Redfern*, A.R.I.B.A.

*B. Henderson-Gray*, A.R.I.B.A.

*Halsall Owen*, A.R.I.B.A.

*Leo de Syllas*, F.R.I.B.A.

## Experiment in Oxford Street

SIR: Mr. Alan Harris's study of the pedestrian-vehicle problem as related to Oxford Street (12.5.60) is a rather extraordinary statement, and I would be interested to see his answers to a few questions.

1. What are the formidable difficulties in installing escalators and cannot escalators be designed to accommodate prams?

2. Why *must* the basic approach be a ramp?

3. What is meant by "the fashioning of special and fairly extensive concourses complete with ramps" for buses and taxis? Whatever they are, surely if they are required with raised pedestrian ways then something similar would also be required if roads were raised.

4. What is the tremendous difficulty of "fashioning a shop window at the new level"?

5. With the raised roadway idea, are manholes the only services to be considered? Are there no other services in the road now?

6. The raised level would presumably be at least 10 ft. above the present road which indicates ramp lengths of 100 ft.—is this not too embarrassing?

7. Why must the raised roadway be on solid fill—will this not look terrible?

8. Would the raised road have solid parapets or would exhaust fumes be allowed to waft gently over the pedestrians heads? If solid parapets, would not the pavements (presumably 15-18 ft. wide) be pretty dismal ditches with a blank wall about 14 ft. high facing the shop windows and noisy traffic tearing along up above?

9. Would not small shops against the retaining walls reduce the pavement width to uncomfortable proportions?

10. Would pull-in space for buses be formed by cantilevering the road over the pavement at intervals? If not what will happen to any free traffic flow idea on a road which just cannot be widened?

11. How would the job of raising the road be carried out? Is it possible to envisage such an operation without completely closing whole sections of the roads over long periods.

12. Could not the operation of raising the footway avoid almost any interruption of traffic?

These are a few of the many questions which are prompted by Mr. Harris's interesting if rather glib article. Would it be possible to illustrate some of the sketches which he must surely have made in the course of his study?

GEOFFREY L. PRICE

Newcastle

The author replies: This letter implies that none of the difficulties which I pointed out are impossible of solution, a view with which I agree. The cumulative effect of these difficulties, however, renders the proposals to raise the footpaths in Oxford Street a major operation instead of a neat and inexpensive expedient, so major indeed as to invite comparison with complete reconstruction.

I am well aware of the drawbacks to raising the road and have mentioned some but in my view this scheme does provide many of the advantages of raising the footpaths with far less administrative and practical difficulty. It is, in fact, a feasible expedient, which, I believe, raising the footpaths is not. I would reply to the writer's questions as follows:

1 Escalators are expensive in first cost, need maintenance and supervision and require a great deal of space.

2 Because I can think of no other.

3 If one is concentrating all bus stops and taxi setting down points in a street at, say, a concourse at each end, where access to the raised footpath is also provided, this concourse will inevitably be very large. With a raised road the difference in level is smaller and access to the footpath is less of an obstruction and such points of access can be scattered along the road, with, of course, a certain degree of obstruction to traffic.

4 One has but to look at any first floor in any shopping street to see the difficulties of creating shop windows at first floor level. Moreover the expense of reconstruction work of this sort is always large in comparison with the result achieved.

5 No service need be shifted, it is adequate in general to increase the height of manholes giving access to them.

6 No.

7 What the roadway is built on will not be visible.

8 I have no figures for the density of exhaust fumes; they may fall, they may simply diffuse. A footpath in a trench is certainly not an ideal arrangement.

9 The small shops or kiosks could be underneath the edge of the road.

10 As I have said, the major shortcoming of raising the road is that there can be little increase in carriageway breadth. The carriageway would, however, be used much more efficiently.

11 The road could be raised a lane or so at a time.

12 No; it would be necessary to sacrifice some part of the carriageway to carry pedestrians while the elevated footway is under construction.

## The Cost of Glass

SIR: I read with interest and no little alarm your technical article (AJ, May 19) dealing with the economic aspects of using sheet and ¼ in. polished plate glass. Whilst sympathizing with the author of this article, who has obviously and unwittingly been misled by rates seen in Bills of Quantities, widely used price books or current glass price lists printed in trade publications, I feel it unfair to potential plate glass users or cost-conscious architects to allow this piece of information to remain unchallenged.

Most Bills of Quantities and price books will show a price in the region of 2s. 1d. per foot super for 32-oz. sheet and 9s. per foot super for ¼ in. polished plate glass glazed complete, whilst current market price lists present a similar differential. However, while these prices may be true of a small contract where the builder carries out the glazing they are far from true on a contract where a glazing sub-contractor is employed. Here then one still sees a rate of 2s. 1d. for 32-oz. sheet but something less than 5s. per foot super for ¼ in. polished plate glass. The reasons? The generous discount given by plate glass manufacturers for bulk purchase and the sudden willingness of glazing firms to share this discount with the consumer although they had apparently been content to enjoy its full benefit prior to about 1957.

I appreciate that the figures I have quoted may cast doubts as to the reliability of builders' estimates or at least the profit margin their employers require but then possibly this is just another QS trick of splitting hairs between "estimate" and "cost" analyses.

JOHN BUGDEN

Weybridge

## Looser Belts?

SIR: I read with great interest your leading article in THE ARCHITECTS' JOURNAL for June 9 last, referring to the paper read by Mr. J. R. James at the recent Town Planning Institute Spring Meeting in Newcastle. As I occupied the chair on that occasion I thought I should write to you as I did not gain from the paper the impression that your leader writer seems to have received. I did not get the impression that Mr. James was "encouraging local authorities to relax their green belt policy."

He was, in fact, advocating ways and means of making green belts really effective and defensible by suggesting they be delineated on a realistic basis, which would have regard to the real purpose of the green belt in the context of estimated demands on land

for development needs. *The Guardian* of May 27 last contains a verbatim report of the relevant part of Mr. James's speech which I would like to repeat here:

"It is useless to adopt a negative approach in which, by designating green belts or national parks or areas of outstanding natural beauty we shall hope to keep people out without at the same time saying clearly where we shall allow people in. Areas should be defined so that they act as a clear guide either to the Minister or to any developer or individual wishing to build. They must also be a clear guide to the district councils which have the responsibility for development control."

The point is that pressures on land are so great that growth must be allowed somewhere. We cannot solve all the problems by going upwards in cities. Where green belts are to be held inviolate, positive steps must be taken to encourage development beyond them as compactly as possible. This means in effect high buildings in cities, green belts, new towns, and town expansion schemes. All points of view are right, so great is the need; a single solution or a combination of only two of the solutions will fail in some important respect. That, in my opinion, was the burden of Mr. James's address.

J. S. ALLEN

Newcastle upon Tyne

[A report of this speech appears on p. 953.]

## Corb etc.

SIR: When I expressed critical remarks about Corbusier's buildings and the Anti-Uglies, I expected someone to rise up in their defence.

Messrs. Collier and Rainford were graded as Students in the last Kalendar, and I am not at all sure they are legally entitled to call themselves "younger *Architects*," but, as I used to believe in "functionalism" when it was the current fashion of my student days, I feel sure that in 30 years, they will be as happy as I am to be classed as an "eccentric reactionary." (I thought I was reading *Pravda*!)

I have learned from experience that looking backwards is a *good* thing, and one of the most enlightening experiences they could have is to look back on buildings designed by Corbusier in the 30-year period I referred to. I have a suspicion that the occupants of those buildings and those who live near them, are not half as enthusiastic as some of our students.

I believe Ian Nairn is a journalist, rather than an architect, and if he thinks the Anti-Uglies help the profession, and that he himself helps by sneering at the work of the "average architect," he will obviously carry on.

My experience indicates that his definitions of "status" were both rubbish as he seems to think it is something which comes from an architect's *own* opinion of his work. Unfortunately, other people's opinions decide our status and most members of the public do not happen to agree with Mr. Nairn's opinions; and they associate the Anti-Uglies with sweaters, jeans and bedraggled hair. Why not let the buildings speak for themselves, and let history decide; and let the student's comment be voiced *within* the profession, instead of outside it?

EWART B. REDFERN

Exeter

## Sites for Norwich University

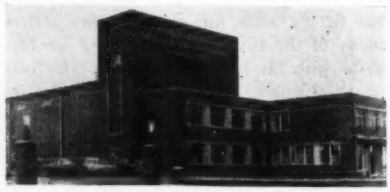
SIR: Your leading article in the issue of May 19 entitled "Sites for Norwich University" is causing considerable interest in Norwich. The extraordinary position seems to have arisen that the Council made a snap decision to utilize the clearly unsuitable golf course whereas the voice of the citizens has been for many months declaring its complete opposition to this site. Practically every letter written to the local Press has supported the King Street/Ber Street area or some other central position.

When a responsible journal such as yours confirms public opinion, an irresponsible council such as ours can surely stand out no longer against both the public and the experts' view which so happily coincides.

B. HENDERSON-GRAY

Norwich

## Bad Mannered?



SIR: I do not care much for the building on page 854 of your issue of June 9th, but I like even less ASTRAGAL's usual bad-mannered remarks.

Perhaps he would tell us whether he includes himself among the dozen Architects who might have produced a better looking and more efficient building, the two dozen who might have produced merely a better looking one, or the hundreds who would have produced just such. (Or could he, perhaps, have not done even as well as that?)

HALSALL OWEN

Warrington

ASTRAGAL replies: Of course, when the question is put so pointedly, I consider myself one of the dozen architects who would have designed a better-looking, more efficient building, and I should hope that Mr. Owen feels the same about his own talents.

## Architects in Jail

SIR: Inquiries are already being made to find out what can be done to help Barnett and Goldman and their families, but it is difficult to get information while the South African Government's Emergency Regulations are in force. Both architects are members of the RIBA. As is usual in these cases, no charges have been made against them in public and neither has ever been convicted of any political or civil crime.

In a letter to the editor of the *Cambridge Review* for May 14, the chairman of the Cambridge Committee for Apartheid Relief announces that readers of that paper have already sent cheques totalling £1,000 to the account of the Archbishop of Cape Town. The fund is still open and to avoid duplication readers of the JOURNAL can contribute through that committee.

However, I believe many architects will want to contribute to their own fund, and to send help first of all to victimized members of their own profession, whose practices may well lie in ruins by the time they are released from jail.

It may be, of course, that, considering the liberal record of many South African architects, those involved in the present crisis may have assistance close at hand. In that case I am sure that no architect subscribing to our own fund would object to any surplus being administered for the general assistance of the Emergency Regulation prisoners.

LEO DE SYLLAS

London

# DIARY

*Lighting & Health.* Paper by H. C. Weston at the Royal Society of Health, 90, Buckingham Palace Road, S.W.1. 2.30 p.m.

JUNE 24

*RIBA Library Group Annual General Meeting.* At 66, Portland Place, W.1. 6 p.m.

JUNE 27

*Institute of Landscape Architects Annual General Meeting.* At 1, Park Crescent, W.1. 6.15 p.m.

JUNE 28

*The Application of Vitreous Enamel and the Decorative Arts.* An illustrated lecture by Edward Winter; organized by the Vitreous Enamel Development Council at the RSA, 6, John Adam Street, W.C.2. 6 p.m.

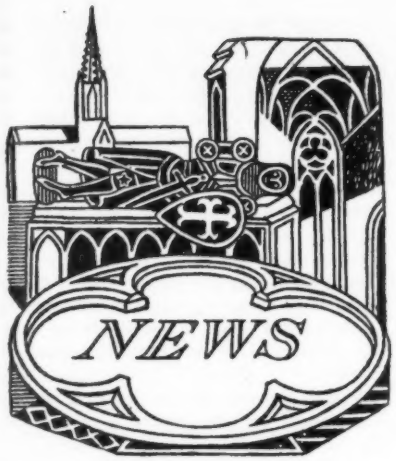
JUNE 29

*ABS Summer Ball.* At the RIBA, 66, Portland Place, W.1. 8.30 p.m.—1 a.m.

JULY 1

*Concrete for Architects.* Two five-day courses organized by the Cement and Concrete Association at their training centre at Wexham Springs. The courses are identical and include lectures and demonstrations on mix design, formwork, prestressing concrete finishes and the construction of roads and paved areas. Details from the Secretary, C & CA Grosvenor Gardens, S.W.1.

JULY 11-15 AND 18-22




## ARCUK

### *Architects and Developers*

The Architects' Registration Council has been considering advertisements in the professional Press, and circular letters received by some architects, both from property-development companies, offering to engage the services of architects who "introduce" acceptable schemes for the development of property, and has issued the following statement:

"After very careful consideration the Council decided at their meeting held on June 8, to advise architects that it would be highly undesirable for any member of the profession to respond to such advertisements or circulars. In the opinion of the Council architects should only undertake work on a proper professional and contractual basis with the client. The implied conditions under which architects are being invited to submit such schemes appear to the Council to be speculative and derogatory to the standing of the profession. Speculative because the architect's services would be engaged only if he finds a site and prepares a scheme for its development acceptable to the property developer; derogatory to his professional standing because he would in effect be acting as a sort of scout for the property developer without having first established the proper relationship of client and architect."

The Council is also considering the circumstances under which some property developers engage the services of architects, and will be shortly issuing a statement on this subject.

## RICS

### *Costs Summer School*

Recently the RICS Cost Research Committee sponsored what was called a post-graduate course on cost planning held at the TUC Building. At the time the AJ* reported that the object of this course was to attempt to spread the gospel of cost analysis and cost planning throughout the rank and file of the quantity surveying profession. This admirable aim was taken up by the Bedfordshire and Hertfordshire County Branch of the RICS on June 11th when they held a one-day "summer school" at County Hall, Hertford.

The one-day course was originally intended for quantity surveyors recently or soon-to-be-qualified and was to be limited to 24 entrants. In fact more applications were received than was anticipated and just over 30 were admitted. Of these there was a good sprinkling of more experienced people including principals of firms who, presumably, were not familiar with the techniques of cost planning, but keen to become so.

Following an introduction by C. M. Nott, principal q.s. to the Herts County Council, the architect's case for cost planning was presented by Stirrat Johnson-Marshall and this was followed by an example of a project cost planned, given by K. H. Norman and D. L. A. Stracey, assistant principal and chief assistant quantity surveyor respectively of Herts County Council, a body which practices what it preaches about cost planning. The remainder of the time was given over to group discussions at which the speakers "sat in" but did not attempt specifically to control discussion.

Courses of this type are going to be exceedingly valuable and the Beds and Herts branch is to be congratulated for its pioneering work. It is understood that the RICS will publish the papers.

* June 16th.

## THE YORK INSTITUTE OF ADVANCED STUDIES

### *Course on New Roads*

The course held over Whitsun was on the Architecture of New Roads and it brought together, for the first time as a study group, members of the professions concerned with the engineering, planning, architecture and landscaping of roads. The study became one of the impact of the motor-car on planning in town and country; frustration was frequently expressed at the apparent lack of machinery and willingness in Government circles to bring the four professions together to find solutions to the problem. It was agreed that the routing of new motorways could help to achieve positive aims in planning and that our greatest need is for an effective national planning policy backed by a large-scale research programme. Proposals for urban motorways must include the redevelopment of the inner areas of our towns and cities, and should be part of a co-ordinated public and private transportation system forming a vital part of the whole concept.

At the moment fear, prejudice, timidity and an alleged lack of money influence too many thoughts and proposals for new motorways; with the ever increasing car production the problem of our urban areas becomes daily more urgently in need of Government sponsored study and action. Must we wait for economic decline to set in before this is officially admitted?

## TPI

### *Spring Meeting*

An encouragingly ambitious plan for the redevelopment of the north-eastern region which centres on Newcastle was outlined at the Institute's spring meeting at Newcastle-on-Tyne, when Councillor T. D. Smith spoke on *The Development Problems of a Regional Capital* and the need to co-ordinate plans for future development through an agreed regional framework covering the whole conurbation and of the particular significance of comprehensive redevelopment in the centre of Newcastle. This relatively small and compact area acts as the main centre for a wide region. But in spite of some fine architectural features it is now seriously congested and outworn. Mr. Smith declared that his Council were determined to redevelop the whole of this area as a modern regional centre. They attached so much importance to this work that they were shortly appointing a planning officer, with chief officer status, especially for this purpose.

The JOURNAL has already commented editorially (2.6.60) on the paper given by John R. James, Deputy Chief Planning Officer to the Ministry of Housing and Local Government. The theme of the paper, *The Next Review of Development Plans*, was a broad one and enabled Mr. James to make a quick survey of the achievements and failures of post-war statutory planning as well as outlining what he considered the next steps might be.

He began his review with a reminder that the development plans prepared under the 1947 Act were a remarkable achievement in themselves. In spite of all their faults—which were acknowledged—they constituted the most complete assessment ever attempted of development problems and future land needs. In his submission this framework has stood up to the strains and changes of the last ten years remarkably well. The general scale and flexibility of the statutory plans had contributed a great deal to their practical value. It had always been considered essential to revise development plans whenever necessary and he considered that the time had now come to revise this framework radically since extensive social and economic changes had affected some of the assumptions on which the original plans had been based.

Examples of the type of change that must affect the basis of a plan were those in the demographic field. It was now clear that population forecasts made at the end of the war were too low. Probably the actual rate of natural increase would be about twice as fast as that anticipated in most development plans. Changes in the number of households—which under conditions of greater prosperity were a powerful cause of the spread of towns—were now known to be more significant to planning than total population change. More powerful forces than either of these were the distributional changes deriving from higher standards of living and improved transport. Here, Mr. James distinguished migratory movements of two kinds. Local movements, within an

urban region, from the crowded inner area to the more open suburbs; and inter-regional migration from the older conurbations to the more prosperous south. Neither of these movements, he believed, could be prevented by regulative planning. Rather, the plans must be adapted to take account of these needs. In his opinion the green belt was not intended, nor would it succeed, in stopping the reasonable growth of a city region. It could and should be used to shape it. The attractive power of London and the Midlands (a basic cause of inter-regional migration) had proved to be greater than Barlow or Abercrombie had expected. In consequence our plans must allow for these broad movements to continue, seeking to direct and regulate rather than prevent them. Further changes which also must affect the revised plans were the shift in emphasis from public to private housing, the concentration on slum clearance and the need to promote central area redevelopment.

In discussing the form in which a revised development plan should be presented, Mr. James laid stress on two points—the urgent need to make the policy and objectives of the plan plain to the lay public and give clear guidance to developers and local authorities. This would involve an improved form of written statement. At the technical level he pointed out the fundamental importance of maintaining careful records of land use changes and development trends; for it was the study and analysis of such facts that would lead the planning profession towards a more precise knowledge of the nature of the problems they were dealing with.

PAUL BRENIKOV

## REGIONAL PLANNING

### *Urbanization in the Tropics*

The third in the series of study days organized by the British Group of the International Centre for Regional Planning and Development, was devoted to urbanization in the tropics. It seems that in almost every tropical country today the major urban centres are expanding very rapidly indeed, and this in its turn is creating a whole host of severe problems which we do not yet know how to solve. The group had brought together a panel of speakers under the chairmanship of C. Y. Carstairs, Assistant Under-Secretary of State for the Colonies, who were invited to examine the causes of this urban growth and discuss possible ways of bringing it under control.

As is usual at these meetings, the contributors represented a variety of skills, and this was brought out in their approach to the subject. A. D. Knox and Miss Anne Martin examined respectively the nature of the urban area itself and the impact urbanization has on the rural hinterland from the economic point of view. According to Mr. Knox, the principal economic function of the great towns in the tropics was as reservoirs for the surplus population pushed off the land during the transition from a subsistence economy to one based on exchange. The industrial functions of these towns were not yet very significant. He did not consider that attempts to curb their growth were practicable—or desirable, nor did he seem to believe that town improvement or industrial development schemes could, of themselves, provide solutions. The basic objective ought rather to be the raising of the general economic level in town and country alike. This main thesis appeared to be supported by Miss Martin. She stressed that the principal cause of the rural exodus was the expected differential in earnings between town and country—not rural poverty. Other important factors included the system of tenure in the rural areas and the type of agriculture practised there. Miss Martin re-emphasized the need to tackle the economic problems caused by urbanization in the country as well as in the town and called for a deliberate policy of economic planning to benefit town and country alike as a necessity for all tropical countries.

The geographers' approach was along quite different lines. Professor Steel emphasized the significance of the great differences of resources, climate, economic development and past traditions which distinguish the various tropical regions and pressed for a re-assessment of urbanization problems along regional lines. New methods, he felt, would have to be devised by urban geographers for this purpose. A hint of the form these new methods might take was provided by Dr. Learmonth in his description of a pilot survey of towns in the Indian state of Mysore, which formed part of the work leading to a Regional Development Plan for this area.

The social problems and tensions experienced by the migrant who goes from his village to the large, expanding town were discussed by Dr. Stirling. He pointed out that these two ways of life are so far apart that very extensive adjustments are necessary. The process of learning new codes of behaviour and accepting new forms of social discipline imposed by the town is difficult and often painful. It seems that these difficulties can easily be increased by well-meaning schemes for "urban improvement" which fail to recognize the need to create conditions in which such adjustment can take place smoothly.

Dr. Koenigsberger had intended to present the planners' own viewpoint, but, regrettably, illness prevented him from taking part. A short paper was read on his behalf by Professor Wise. Starting from the premise that the present wave of urban expansion in the tropics was no temporary phase, but a definite stage in development on a world-wide scale, Dr. Koenigsberger pointed to the need for all new countries in the tropics to establish definite policies for urban growth. Various expedients had been tried—for example new towns and redeployment of industry—but although both these were very valuable he considered that they could only become fully effective in the long-term. While the administrators and their expert advisers were arguing, the people in these places had acted. They had moved, and were continuing to move, in very large numbers into the towns, and it seems that this movement will continue for some time to come.

Up to now these migrants had only transferred themselves from one kind of slum to another—a change that had done very little to increase their productivity. These growing masses represented an enormous reserve of potential energy. The main task now facing us was to devise means of harnessing this unused potential. This, in Dr. Koenigsberger's opinion, was the great challenge not only to planners but to the social sciences as a whole.

Even a quick sketch—which is all that can be expected from a single day of study in a field of this kind—provided several valuable impressions for the British-trained architect and planner. Those whose work may take them to the tropics were vividly reminded of the utter absurdity of attempting to apply stock solutions evolved for British conditions and of the gigantic scale of the problems involved. Both these are points of particular importance since many overseas planners are trained in Britain. At the same time those of us who work within the orderly framework of British planning (and are often annoyed by its imperfections and absurdities) were able to see our own problems in rather better perspective. The Regional Planning Group does valuable work by reminding us of the needs and problems of countries overseas.

PAUL BRENIKOV

## CERAMICS

### *Mastics Sell Glazed Tiles*

At the first press reception given by the recently constituted British Ceramic Tile Council (formerly Glazed and Floor Tile Manufacturers' Association) samples, photographs and a film demonstrated the latest developments in materials, design, applications in interior and exterior work and fixing methods. The Council represents 17 of the principal manufacturers which is 80-90 per cent. of the existing total and its object is to develop research in manufacturing processes and fixing techniques and to organize marketing and publicity. The film was well produced but would have been more convincing had it not been seen through the eyes of a honeymoon couple who seemed as determined to bore each other as the audience. The samples exhibited were stated, with pardonable pride, to be a selection from a range that would have required the accommodation of Earls Court. Question time demonstrated a livelier interest in the subject than is often the case at these functions. In reply to the question of crazing, its causes and prevention, it was pointed out that non-crazing tiles are now produced as standard. It was stressed that the new fixing mastics in any case make crazing far less likely than the old mixes which, when too strong, caused stresses in the tiles. Questions of joint sealing for hygiene brought the response that a new grout, evolved for hospital use, had now been on the market for 12 months. The new mastics, it was claimed, reduce labour costs as they are more rapidly applied and require less surface preparation than the traditional methods: they are also a "do-it-yourself" boon. The

average cost of a normal bathroom tiled with plain tiles (as against the decorated, which are naturally much more costly) was reckoned to be about £3 per sq. yd. including fixing. It was pointed out that ceramic tiles have not increased in cost at all in recent years compared with other materials. There is some doubt, however, as to whether the woman was quite on the beam who enquired in stentorian tones as to how the price compared with Wilton carpet. (British Ceramic Tile Council, Federation House, Stoke-on-Trent.)

## ISE

## *Paris and Motopia*

"What would be the nature of a town of 5 million people permitting the unimpeded use of motor cars at a saturation level of two cars per family?" This was one of the main questions Monsieur Elkouby, a French roads and bridges engineer, tried to answer recently when he addressed the British Section of the Société des Ingénieurs Civils de France at the Institute of Structural Engineers. Monsieur Elkouby examined the implications of the following assumptions on the centre of a 5 million city: 1. everybody goes to work in his own car, 2. the journey should not exceed ½ hour, and 3. Car parking will be available within max. 100 yards from everyone's destination.

While most sensible people will consider the first assumption as so far-fetched as not to merit investigation, we should remember that there are advocates who would have us eventually rely 100 per cent on the motor car to get us to and from work and that this is indeed a situation some American towns are approaching. It is therefore of some interest to follow Monsieur Elkouby's thesis to the bitter end.

On the assumption that approx. 10 per cent of the 5 million population will work in the centre, provision would have to be made for 500,000 cars to enter and leave the central area daily within the rush hours. M. Elkouby estimates that no fewer than 60 motorways with 3 lanes (the centre lane to be reversible in the direction of the tidal flow) would be required to cope with the daily migration. These motorways would have to be routed right through the centre and each would have to be increased to 12 lanes (210 ft.) in order to absorb the convergent motorways. Assuming a grid system were adopted, the resulting "super blocks" would have to be 1,500-3,000 ft. square. The perimeter of such a central area would have to be at least 20 miles or a square of 4.6-5.3 miles but for optimum conditions a square of 8 miles would be required! (London's central area is a rectangle of approx. 3 × 2 miles.) This in turn would result in an extremely low occupancy rate of the working population which could be accommodated (max. 80 person/acre but ideally only 20 person/acre). It can be seen therefore that the diffusion of traffic in the centre could only be obtained at the cost of a dilution of it in a space up to 8 times as extensive as its useful area. Needless to add that the visual result in terms of buildings and spaces would be a travesty of urbanity. Thus M. Elkouby proved con-

## ARCHITECTS AND APARTHEID

News of two more architects jailed in South Africa under the Emergency Regulations reached us last week—from one who got away, Isaac Horvitch, who, being a light sleeper, heard the police car draw up at his house at two in the morning (which seems to be the regulation time for making these arrests), slipped out of the back and drove off in his bubble car.

He has now arrived in London, where he has been joined by his South African wife with their three children, and has immediately got down to the necessary business of finding work, finding lodgings, and making friends.

Less fortunate was Leo Bernstein of Johannesburg, who was arrested along with his wife, again in the small hours, leaving four children suddenly parentless, the youngest four years old and now being looked after by their teenage daughter.

Three more children have been left stranded by the arrest of Bernard Gosschalk, another assistant of Jack Barnett, whose arrest was reported last week. This means that Barnett's whole office staff is now in jail. His wife, by the way, was arrested along with him, but released shortly afterwards because she has a two-month-old baby.

Barnett is a remarkably successful young architect in Cape Town, a Baker Scholar, a winner of several competitions, and has done an amount of work on the buildings for the Union of South Africa Festival now—strange as it may seem—in progress, which must at the moment be slightly embarrassing to the South African Government. In fact a fountain designed by him was about to be officially unveiled when he was arrested. The opening was postponed "owing to technical difficulties."

These men are all in private practice, and Jack Barnett's was prospering, but according to Horvitch, their practices are likely to be a wreck when they are freed, and many clients will be scared to use a man who has been in this sort of trouble, "as the authorities see that they shall be." Horvitch's own practice was completely ruined through his being among the hundred original victims of the famous Treason Trial in 1954, and he was just getting back again when the new Emergency hit him.

Clearly these men and their families need help, and we hope and expect that a fund for that purpose will be launched very shortly by the R.I.B.A. Since their families need help quickly, however, Astragal will meanwhile be most willing to receive and acknowledge cheques and all forms of donation from AJ readers, and to forward them, earmarked for Architects' Aid, through the Defence and Aid Fund run by that stout-hearted and active campaigner, Canon Collins, who knows all there is to know about sending money to South Africa.

clusively that the so-called ideal of "man on 4 wheels" was unattainable without strict and quite uneconomic limitations of densities and that in any case it implied the construction of dozens of motorways at quite prohibitive costs.

**Paris's New Road Plan**

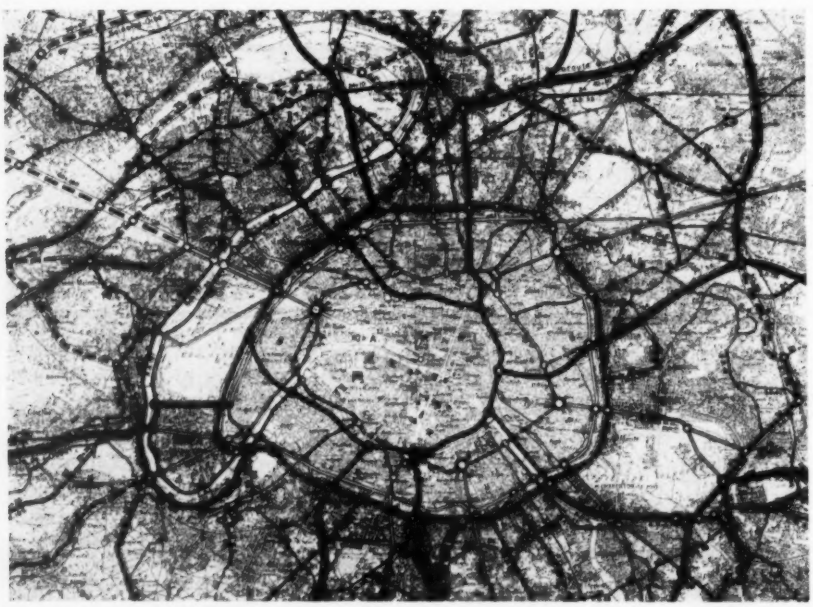
M. Elkouby returned to reality when he explained the new road plan for Paris which is being implemented. 100,000 cars enter and leave the central area of Paris daily. The main urban roads are capable of carrying about 50,000 vehicles and the intention is to double this capacity. The plan provides for 8 radial motorways routed through non-built-up gaps and quarters needing rebuilding, and terminating in a ring road around the central area which passes through the Place l'Etoile in the west and Place de la Nation in the east. (It is necessary to remind oneself that this new circumferential motorway which is now under construction is doubled by an existing circular boulevard which will act as a lateral service road to the new motorway.) Although the new circular motorway will join the existing main radial roads leading to the centre, the plan provides for the prolongation of these eight motorways right up to the business centre, thus doubling the capacity of the ordinary radials and reducing the duration of the journeys.

In order to distribute effectively the traffic in the central area it is necessary to link each motorway arriving at the centre with a certain number of urban roads; this function is carried out by a distributor road which underpasses all intersections but is connected to them by the link roads. This distributor road encircles the centre and consists of two high-speed carriageways (overall width 42 ft.) with a total capacity of 12,000 vehicles/hour. To obtain good dispersal of traffic from this distributor, these carriageways are duplicated by one-way parallel roads on either side of which M. Elkouby called "decompression" carriageways which join existing roads at ground level. Access from the high-speed distributor to the "decompression" carriageways is provided every 2,100—2,400 ft. Thus a ring of 16,000 to 17,000 vehicles/hour capacity encircles the centre, and the speaker was confident that this is sufficient to disperse the traffic into the central urban system.

In addition, this ambitious road plan provides for the siting and construction of garages of a total capacity of 100,000 cars. Most of the multi-storey garages will be situated near the distributor road for offices which will be built on the edge of the central zone; this should also help to reduce congestion in the very centre. The total cost of these new motorways only was stated to be in the region of £700 million.

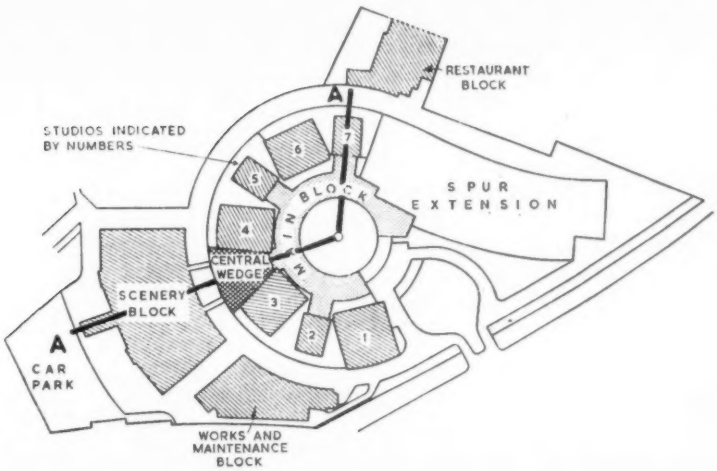
Thus, M. Elkouby summed up, an adaptation of the existing road plan is possible by the construction of a limited number of urban motorways and a very large number of parking garages. This, he said, was also desirable if we wish to avoid the flight of activities towards the outer zones and the slow decay of the heart of the town. Yet, when all these new motorways, link roads and multi-storey garages have been provided for the motor cars, he concluded, public transport in the form of suburban railways, the underground, and buses must remain and be substantially improved (Paris is planning an extension to the underground) since they are an indispensable element of urban transport in a large town.

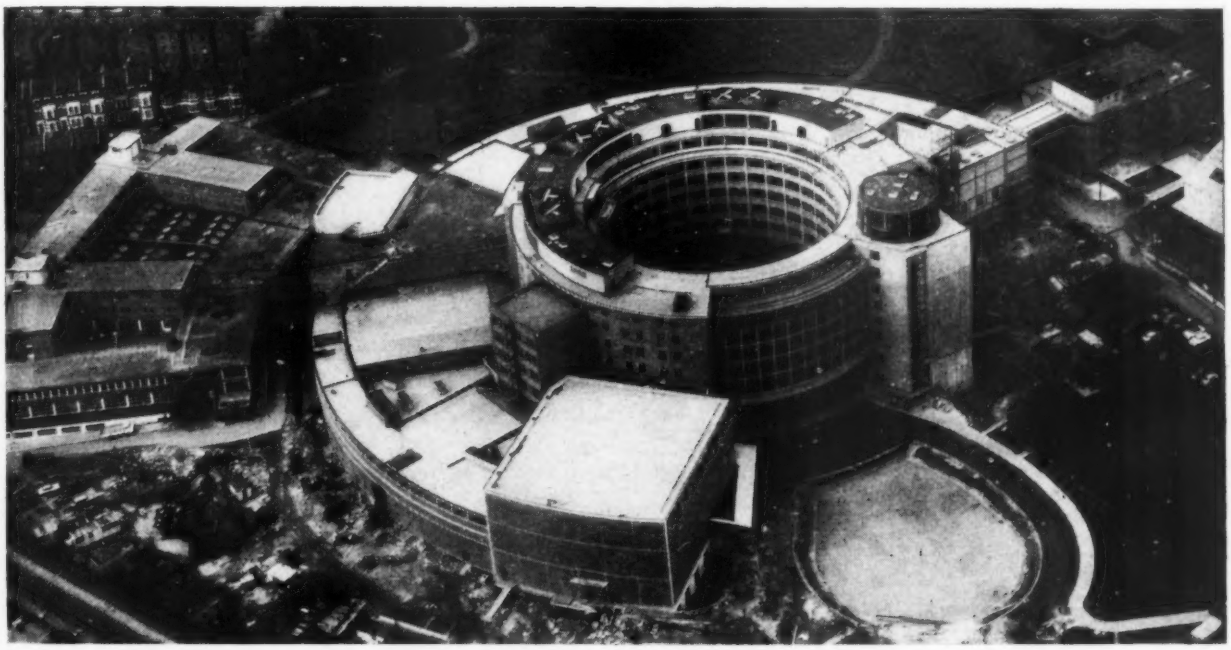
Many questions, however, remain unanswered. For instance, what is being done for the poor pedestrian who is an even lower species in Paris than in London? What will happen to the areas through which the new motorways will charge? Are they all going to be comprehensively redeveloped in depth or just cut through and plastered up? Will the vast capital outlay for these new motor roads slow down the equally urgent urban renewal process of the many obsolete areas we know exist in Paris, often right behind the magnificent façades of Haussman's boulevards? Although it appears that no really drastic road works are envisaged within the centre, to what extent will the extensions of the eight motorways and the new distributor road effect the urban qualities of the Paris we know and love, and what will have to be sacrificed in terms of buildings and urban spaces? Finally, is M. Elkouby right in condemning out of hand what he calls "the flight of activity from the centre into the outer zones"? Is it not likely that the central area of Paris, like that of London, simply cannot take a large number of additional offices and that a policy of decentralizing some of these offices from the centre into the suburbs of Paris would therefore be sound? Far from contributing to the decay of the central area (which M. Elkouby rightly fears and which is a danger for other reasons) such a policy may well have the result of providing the badly needed elbow room for the existing offices and entertainment activities in the central area of Paris. Whatever the answers may be to these questions, there is no doubt that M. Elkouby has made a valuable two-fold contribution to the topical question of urban motorways: he has proved with his cool French logic that the exclusive reliance upon the private motor car as a means of mass transportation in a large city is self-defeating and doomed to failure, both for reasons of traffic engineering and economics, and that public transport is therefore of paramount necessity. He has also informed us of the competent and bold road plan for Paris which seems to strike the right balance between our tendency to sit back and practically ignore the motor car and the American mania for subordinating cities and their inhabitants to the vehicle. There is, of course, one fundamental difference between London and Paris: the central area of Paris with its system of fine wide boulevards can be successfully adapted to 20th century traffic in the manner outlined by M. Elkouby while London's irrational and partly mediaeval central area road network will remain a headache long after all the potential urban motorways and multi-storey garages have been built. Some parellels can be found as to minor remedies, *e.g.* Paris too is obliging private developers to provide their own car parking within their new buildings (there is even the intention to force owners of existing buildings to do the same), multi-storey garages are planned at strategic points and all street parking is to be prohibited eventually. But there seems to be all the difference in the world between our "too-late-and-too-little-approach" and the relentless logic of the Paris road plan and a sense of urgency to implement it and to face up to formidable capital expenditures. This, however, does not necessarily mean that on balance the Paris approach is better, and one would dearly like to know how much of Paris's housing, schools and green space programme has been sacrificed to find the vast sums of money for the new motorways. W.G.B.



*The new road plan for Paris.*

# BBC TELEVISION CENTRE, WHITE CITY



| | |
|---|---|
| Architects: | Norman & Dawbarn |
| Architectural Partner-in-Charge: | Walton H. Lindsay |
| Structural Engineering Partner-in-Charge: | Herbert Wilson |
| Associate-in-Charge: | J. P. Thompson |
| Chief Representative on Site: | Peter Housham |
| Senior Architect: | John Sheldon |
| Senior Structural Engineers: | Colin Ross, Felix Levy, Gordon Lynn |
| Senior Assistant Architects: | Geoffrey Hughes, Arthur Hayes, Sheila Ward, Colin Harbott, Douglas Boyd, Ronald Child, Kenneth Rickman |

*With the opening of the Television Centre at the White City, the BBC at last has in commission its first studios actually designed and built with television in mind. Deriving from a closely detailed brief and a much publicised back-of-an-envelope sketch made by the architect ten years ago, the Television Centre's first of its seven studios is ready for production.*

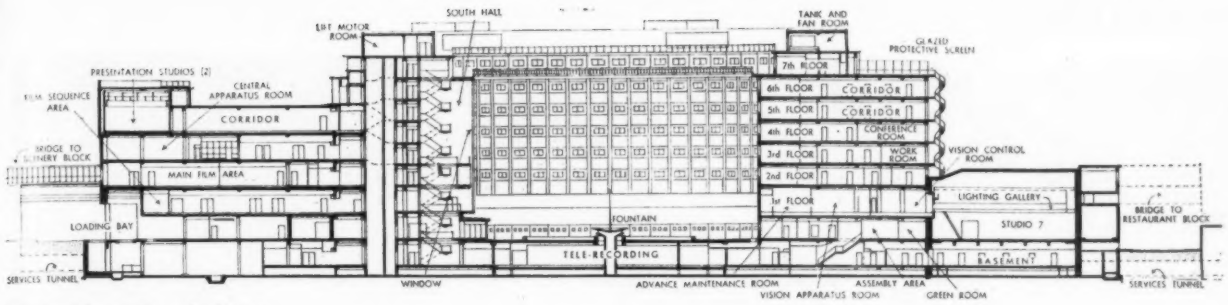
*The original concept, which has been developed on the whole with remarkable consistency, envisaged a circular inner drum of offices surrounded by an outer ring of studios, linked by a circular runway to a single scenery block. A clear circulation diagram,*

## Cutaway drawing of the building

*Restaurant Block.* 1 Service for 750 diners on three floors. 2 Foyer lounge. 3 Bridge lounge. 4 Passage below bridge lounge. 5 Entrance from road.

*Scenery Block.* 1 Carpentry and machine shop (ground floor). 2 Property stores (basement). 3 Scenery storage (basement). 4 Office wing (west). 5 Aerial mast (receiving). 6 Set building space (ground floor). 7 Vaulted roof over setting space. 8 Scene painting studio (60 feet high). 9 Electrically-operated painting frames (30 feet high). 10 Console controlling height of frames. 11 Cat-walk. 12 Office wing (east). 13 Temporary telephone exchange. 14 Offices. 15 Toilets. 16 Scenery lift (basement to ground floor). 17 Boiler house (basement). 18 Fuel oil storage tanks (basement). 19 Papier mâché workshop. 20 Drapes and curtain store. 21 Special effects section. 22 Outside gallery along face of building. 23 Bridge linking blocks. 24 Protective hoods across roadway. 25 Scenery and property vans. 26 Scenery and properties (inward and outward).

*Main Block.* 1 Open balconies. 2 Electrical substations. 3 B.B.C. Staff Club roof garden (over Studio 6). 4 Emergency stairs. 5 Plant room. 6 Contactor and dimmer room. 7 Floor of Studio 5. 8 Studio audience (200 persons). 9 Script libraries (4th and 5th floors). 10 Water tanks. 11 Cooling towers (ventilation plant). 12 Lift motor rooms. 13 Goods and passenger lift shafts. 14 Main staircase (South Hall). 15 Ventilation duct. 16 Studio store. 17 Access from assembly area to Studio 4 and 5. 18 Floor of Studio 4. 19 Studio audience (400 persons). 20 Roof for outdoor filming and television. 21 Presentation studios (2). 22 Film sequence area. 23 Central apparatus room. 24 Central control. 25 Quality check. 26 Telecine. 27 Main film area, 35 mm. 28 Corridor. 29 Loading dock. 30 Roof trusses. 31 Scenery runway serving all studios. 32 Scenery entrance to studio. 33 Echo effects rooms. 34 Dressing rooms. 35 Studio audience (400 persons). 36 Sets positioned on studio floor. 37 Tele-recording suite. 38 Central lawn. 39 Paved way for fire engines. 40 Fountain. 41 Conference room. 42 Stars' dressing rooms. 43 Control area Studio 6. 44 Entrance hall (ground and first floor). 45 Technical maintenance. 46 Test room. 47 Engineers' offices. 48 Wardrobe, tailoring and stock-room. 49 Offices. 50 Ventilation plant. 51 Roof walkway. 52 Staircase. 53 Main entrance colonnade. 54 V.I.P. car park. 55 Crowd dressing rooms (basement). 56 Lighting control room (Studio 1). 57 Vision control room (Studio 1). 58 Sound control room (Studio 1). 59 Vision apparatus room. 60 Studio lighting grid. 61 Pit in studio floor (can be water filled). 62 Make-up lockers. 63 Repairs and maintenance. 64 Advance maintenance room (first floor). 65 Stairs up—from basement. 66 Assembly area. 67 Green room. 68 Quick change room. 69 Studio audience (200 persons). 70 Studio equipment store. 71 Studio production store. 72 Subsidiary rooms—telephone system. 73 Corridor (basement). 74 L.C.C. gardens.




Section through main block.



View from Main Entrance: Studio 1 on left with covered way for studio audiences; section of inner " drum " of office, centre. A " spur " extension will be connected to the existing building on the right.



The central garden, below which is the tele-recording studio. The steel-framed structure is faced with mosaic and the brick spandrels with pale grey faience. The studio control area is expressed externally as a storey-high band of pale green mosaic, with a lined pattern in scarlet. The south hall staircase, behind which is the " central wedge " is also faced with mosaic. The floor of the garden is paved to allow easy access for fire fighting.

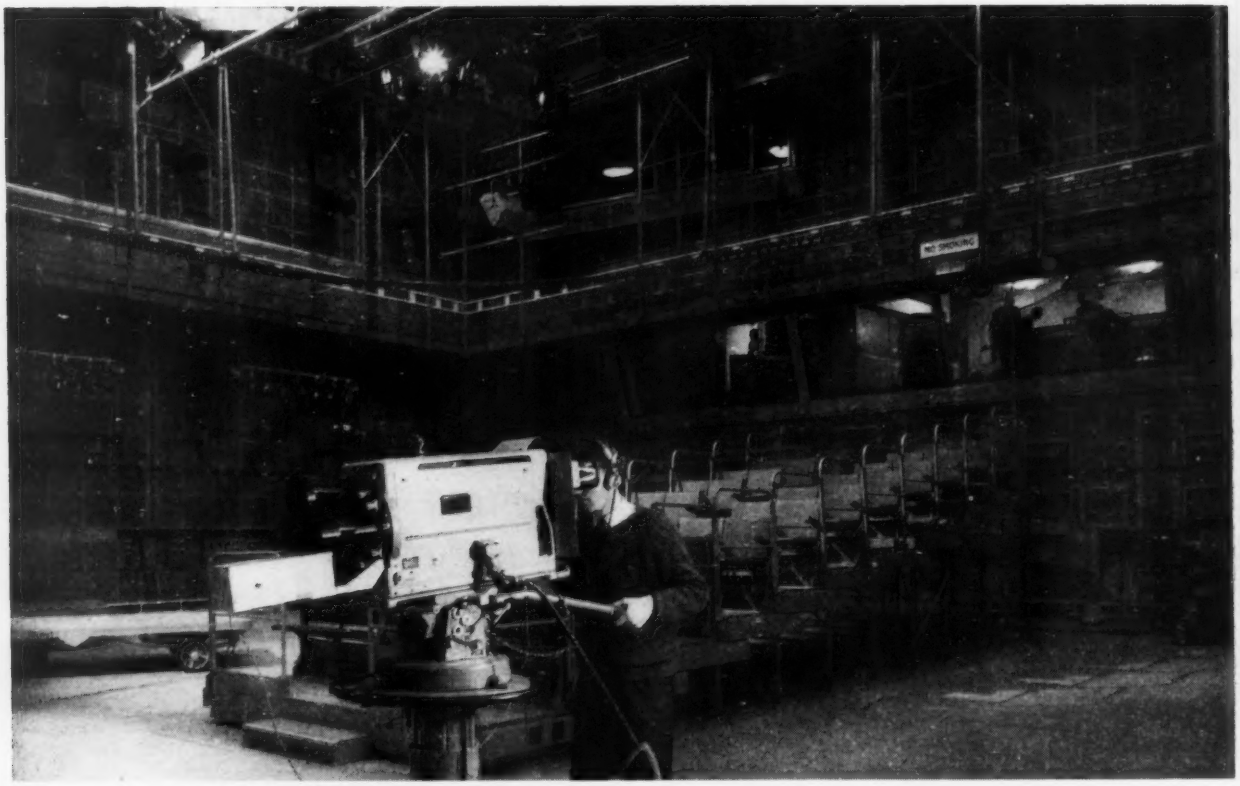
*keeping artists, technical operations and scenery delivery all separate until they met at the centre of activity, the studio floor, was simply bent into a circle to fit the site.*

*From the outside, it must be said that the building makes little impression. The circular, drum-shaped mass, so clearly seen from the air, is so large that the view from without the walls shows only a small, slightly curved segment, which makes no visual impact at all. In fact, the building only makes its impact when the visitor gets inside the drum, and stands in the central " garden " as it is firmly called, with six storeys of mosaic-faced offices rising up all round, and Huxley-Jones's fountain splashing away in the middle.*

*The original concept, however, seems to have stood up to a very exacting working out of the brief relatively well. This is not to say that the relationship of all the parts is completely coherent, or that there is no sign that the original plan has been somewhat strained at the " corners " in certain areas, perhaps by the addition of later requirements. A larger site might have led to some welcome loosening up of the design. Failing this, it would have been possible to dispose some of the accommodation differently without compromising the " circulation diagram "—though not perhaps without upsetting the purely " architectural " concept. This might have allowed for a dozen or two rehearsal rooms, a more adequate car park, perhaps a larger scenery and property block to be provided. These, however, are minor criticisms of a highly competent answer to a highly technical and complex programme. The building is not planned to be completed for a number of years, but this first phase to be completed is designed for the production of 1,500 hours of television programmes a year—about half the BBC's output, and the cost of building and equipping it is about £10 million.*

*The main block, started in 1955, has an eight-storey inner ring containing dressing rooms, administrative offices, wardrobe and music departments, maintenance engineers' offices and a staff*

## TV CENTRE



Studio No. 3: Electrically operated lighting battens are controlled from a wall mounted panel (right). Control Rooms are behind the plate glass windows (left). Air-conditioning inlets are located above and below gallery level and above the ceiling grid. The walls are lined with quilt covered resonators for sound absorption.

*recreation club. All this surrounds the 150-ft.-diameter central garden, dominated by a bold and sonorous fountain from which sprouts a 40-ft. obelisk carrying an unforgivably feeble gilt nude representation of Helios, the all-seeing Sun God, gamely balanced on a gilt ball, and distressingly present in every glance from every window.*

*Surrounding this tall inner ring, and with their production floors at ground floor level, are seven studios, of three main types: Studio No. 1 is 108 ft. × 100 ft. × 54 ft. high, equipped with a pit which can be filled with water. This studio will be used for light entertainment and musical programmes. Studios 3, 4 and 6 are each 100 ft. × 80 ft. × 44 ft. high, and will be for drama, children's programmes and general purpose programmes. Studios 2, 5 and 7, each 70 ft. × 50 ft. × 33 ft. high, are for music, schools and women's programmes.*

*A good deal of original thought has gone into the design and equipping of these studios and they represent a great advance over the matey but cobwebbed chaos of Lime Grove. For instance, each is surrounded by a high level gallery for lighting and supplementary scenery and each is (or will be) equipped with a large number of electrically operated hoists for lighting, and traversing hoists for scenery. These are operated from a console, provided with a "memory" which can be fed with a preplanned sequence of lighting changes and then operated automatically.*

*A newly developed system of collapsible tiered seating which can be erected and dismantled very rapidly can be hitched to a small tractor and brought into any of the studios, for the use of those famous laughing audiences and others. Air-conditioning, acoustics and lighting have all, of course, been closely studied and are combined to give very precise control of the studio environment. Flooring is of heavy duty linoleum tiles laid on asphalt, and the specification clause reads "dead flat," to avoid camera vibration during tracking shots. This appears to be causing the contractor some anxiety, and may yet cause more to the maintenance staff unless the surface is kept permanently and effectively sealed. The tiles have inlaid numbers of the same Munsell value (reflectance factor) as the surround, to help actors to locate themselves accurately.*

*The studios are arranged in three groups relating to three actors' assembly areas in the basement, which are reached easily from the crowd dressing rooms. Stars' dressing rooms are on the ground floor, overlooking the garden. Between each pair of studios there are spaces for quick changes and storage of apparatus. Each studio has its own control rooms for vision, lighting and sound at first floor level overlooking the studio floor through large plate glass windows. The control equipment is compact and includes a number of highly technical innovations which have allowed the control rooms to be so designed that key*



Corridor in central block. In general, detailing is reasonably neat, workable and unobtrusive but there are one or two exceptions where the designer has not been sufficiently aware of the strength of the material he is using or the joiner a little careless with his finish.



One of the dining rooms in the restaurant block. This block was completed in carcass form in 1955 and has been used for rehearsals. It has now been equipped to serve 500 dinners at a sitting and will ultimately be completed to bring the number up to 750.

*operational people are in visual contact with one another during transmission and can thus work more effectively as a team. Between studios 3 and 4 is the "central wedge" containing two presentation studios and the central control room. This is the focal point for the control of programme contributions from all sources—local studios, telecine, telerecordings and outside broadcasts. Also in this block is the central apparatus room, which serves several technical functions, including the monitoring and distribution of signals to the national network. It is packed with highly specialised electronic equipment, mounted on simple metal framing and interconnected with a mass of tidily-routed cables. On the second floor of this wedge is the Telecine Suite, containing equipment for the transmission of films.*

*Surrounding the ring of studios is a 20-ft.-wide covered road, round which scenery will be trucked from the scenery block—which was completed in 1954. Whether this artery will allow free flow of scenery when seven or eight studios are fully operational is perhaps doubtful, but since the block is centrally placed it has every chance of doing so. This block is connected by bridges to the central block, and most of the scenery for television productions will be made here, though it seems that it will still be necessary to send a fair amount of work out to private contractors. How this will be affected by the development of back-projection techniques for scenery is not yet clear. The block has a 60-ft.-high painting studio with electrically operated painting frames, together with a machine shop, property storage and various ancillary stores and workshops.*

*Adjoining the scenery block will be a Works and Maintenance building, housing a film unit, offices and general services for the Centre. To the west of the main building and connected to it by a bridge is the four-storey restaurant block, containing cafeterias, coffee bars and a variety of dining rooms (incidentally, why do the VIPs have a separate dining room? Can't they muck in with the chaps nowadays?).*

*Mechanical services are of course complex. For instance, each of the studios has its own air-conditioning plant, located in the basement, while separate plants serve control area, dressing rooms and technical areas. Cleaning is by a central vacuum installation through inconspicuous hose connections widely distributed throughout the building. There are two escalators and a variety of high speed passenger and slower-moving goods and service lifts.*

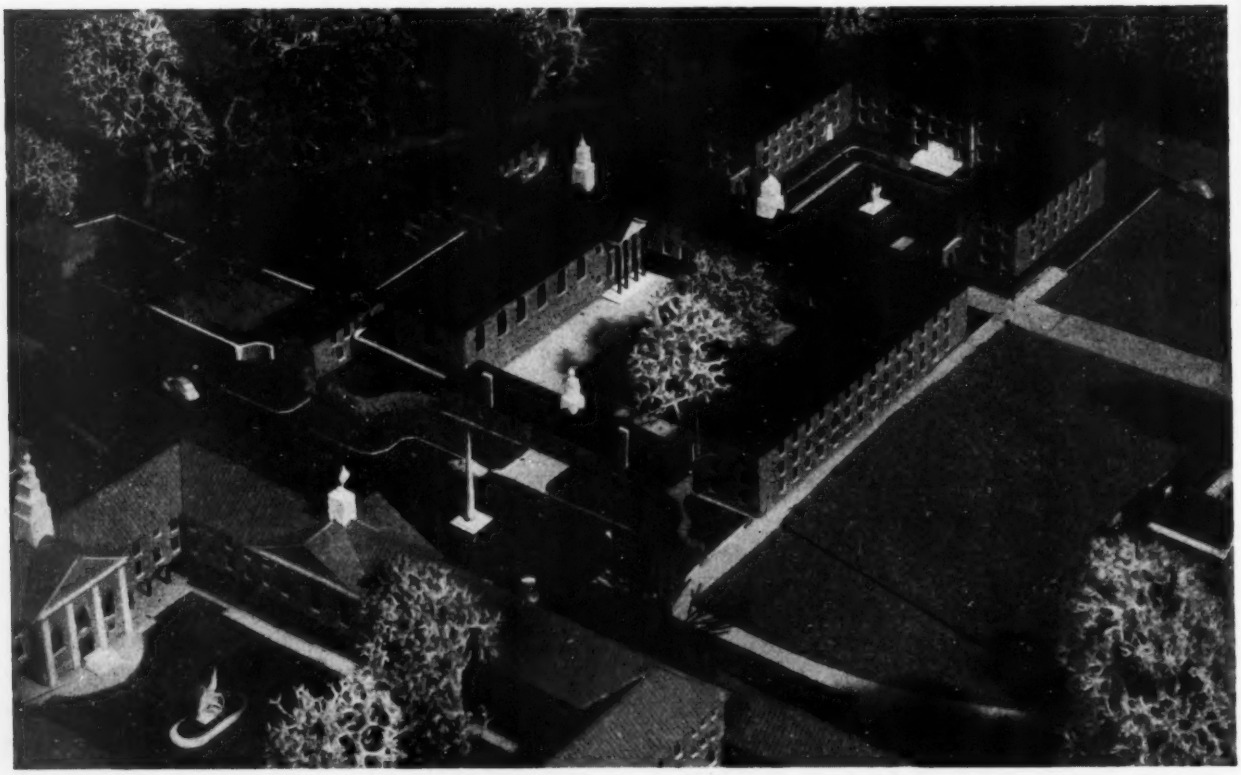
*BBC Television comes of technical age with this building and the producer now has at his command a wide range of exacting and exciting technical facilities. Whether productions will be better for the viewer in this complex but smoothly run environment we shall see.*

(Contractors on p. 977.)

# NOTTINGHAM UNIVERSITY HOSTELS



*Models of the five new hostels for men students to be built in University Park were recently put on show in Nottingham.*



*Two hostels by J. Fletcher-Watson.*

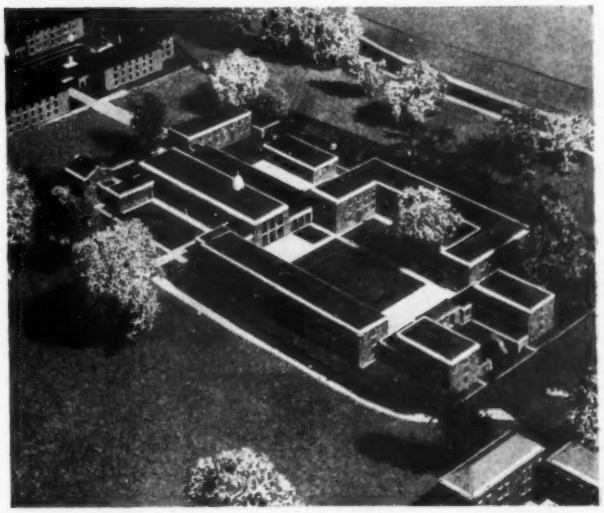
## A MISSED OPPORTUNITY

*Tough problems face a university with money to spend and buildings to produce. The buyer may know exactly what he wants qualitatively, but will he recognize or get it? How does one find the right architect? Nottingham University is to build six new halls of residence in the University Park. These are to be mainly four-storey blocks round courtyards, and an early warning of their style shows it to be frankly eclectic.*

*The mature landscape has been allowed to flow over and through the buildings resulting in the visual fragmentation of landscape and buildings. Contrasting block heights would have avoided this, but tall blocks were rejected owing to circulation problems, "everyone leaves and returns at the same time," and the feeling that these would destroy the "collegiate atmosphere." The present solution, however, might well destroy the magnificent landscape of the University Park, if the student population rises much above the 1968 figure of 4,000.*

*Coal is underneath, the NCB could use it and an inquiry is soon to be held. Subsidence is a possibility and it is surprising that massive and vulnerable construction is to be used. It was felt that the principle of resilient building developed by the University and the Notts CC and embodied in the CLASP system would prevent the achievement of the "right" academic character, and so the chance to fuse twentieth-century technology and the humanities was not even a starter.*

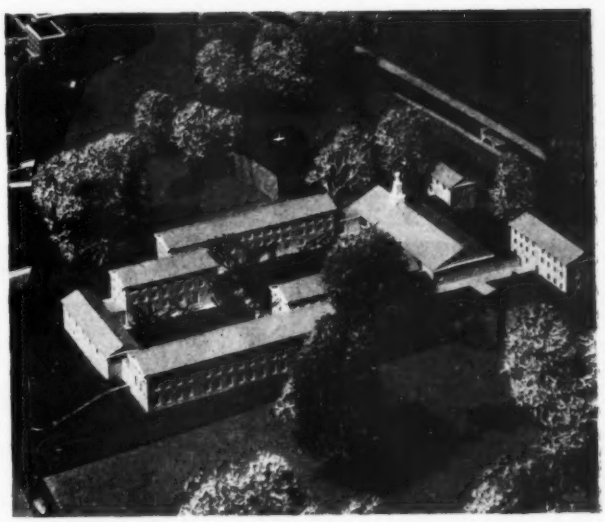
*Each of the five men's hostels will provide rooms for 210 students, with separate wardens' houses and suites for six resident dons in each of the men's halls. They will be built on 60 acres of the University Park, and linked by a new road to the present road system in the park. The University district heating scheme is to be extended to provide heating for the new buildings. All the men's halls have been designed on the courtyard principle, with staircases giving access to the study bedrooms. This apparently vital principle of university design, however, is not applied in the case of the women's hostel to the east of the Park, which has been planned on the corridor system, in accordance, presumably, with the traditional, institutional character of buildings for women. The design of the women's hall was the winner in a competition sponsored by the University in 1950, and the architects are Turley and Williamson. Since the site has been changed since then, however, a modified scheme has been prepared. Consultant architect for the whole scheme is Sir Percy Thomas. As the accompanying pictures of the men's hostels show, all the designs include various "classical" ornaments which, in the models, have rather the air of white sugar decorations on a cake.*



*Brian O'Rorke.*



*F. E. Woolley.*



*D. H. McMorran.*

*There's nothing as good as Vermiculite for*

**PLASTERS**



* **Light weight** — substantial reduction in dead load; lighter to mix, to carry, to apply.
* **Fire resistant** — high fire ratings with steelwork, timber, prestressed and reinforced concrete.
* **Firm adhesion** — outstanding on all normal backgrounds, including concrete.
* **Thermal insulation** — two to three times the insulation value of sanded plasters.
* **Cracking resistance** — maximum resistance due to the resilience of the aggregate.

***And it is much cheaper to batch and mix your own plasters on site***

***specify***

# VERMICULITE

FOR PLASTERS, ROOF SCREEDS, FLOOR SCREEDS AND LOOSE FILL

Send for full details —
The Association of Vermiculite Exfoliators, 59 Gresham Street, London, E.C.2. Telephone: METropolitan 9101

technical section

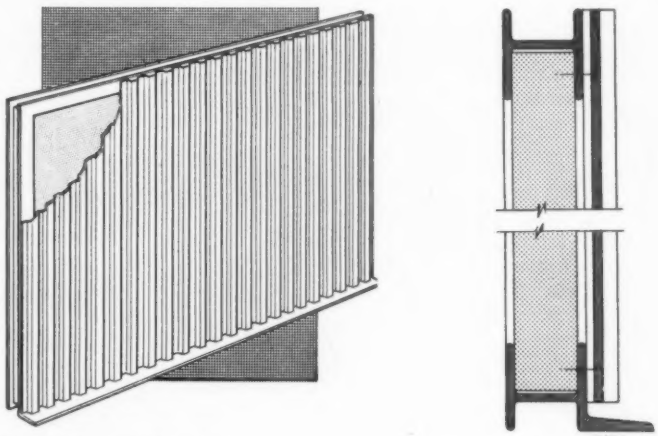
## THE INDUSTRY

*The small exhibition of new products at the Building Centre closed on May 28. This week Brian Grant reports on those products on show which he has not mentioned before. These include w.c. partitions, aluminium curtain walling panels, corrugated plastic sheeting, an all-plastic cistern, lightweight aggregates, and figured rolled glass.*

The Building Centre show of materials introduced during the last few months was an interesting display, but the majority of the available information could only be found from the relevant manufacturers' leaflets, a notoriously deficient source. The following notes are therefore based on an examination of the exhibits and leaflets. Manufacturers' representatives were not present.

**W.C. partitions**

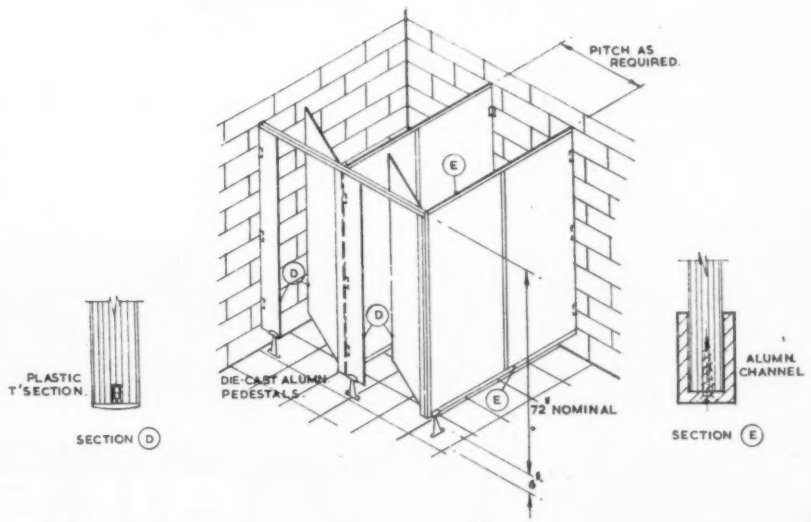
Venesta, who first started producing Plymax sheeting 30 or more years ago, have now introduced Plymel, a plywood or chipboard panel faced on both sides with melamine plastic, which provides a hard-wearing decorative finish and needs no maintenance. The material is made up into standard w.c. compartments 6 ft. 6 in. high including a 6 in. ground clearance, and 5 ft. front to back; subdivisions are at 2 ft. 9 in. centres, but non-standard sizes can be produced to order. When a plywood core is used the partitions are ⅜ in. thick, with ½ in. doors and front panels; with a chipboard core, all are ½ in. Extruded plastic mouldings are used to finish the edges of the front panels and doors, with aluminium channels at the top and bottom of partitions. (*Venesta Plywood Ltd., Vintry House, Queen Street Place, London, E.C.4.*)



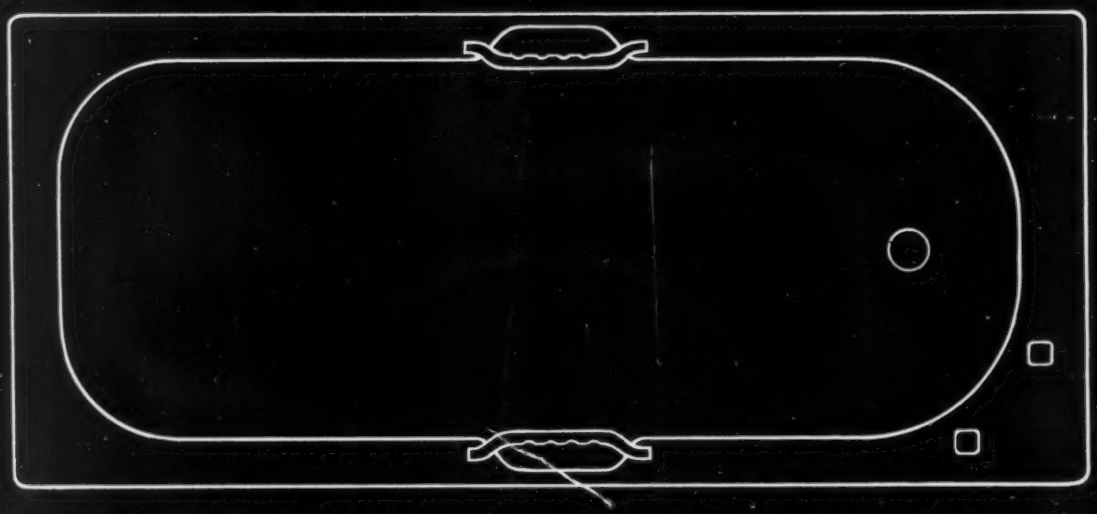
*Marsland Stenmar infil panels.*

**Curtain walling panels**

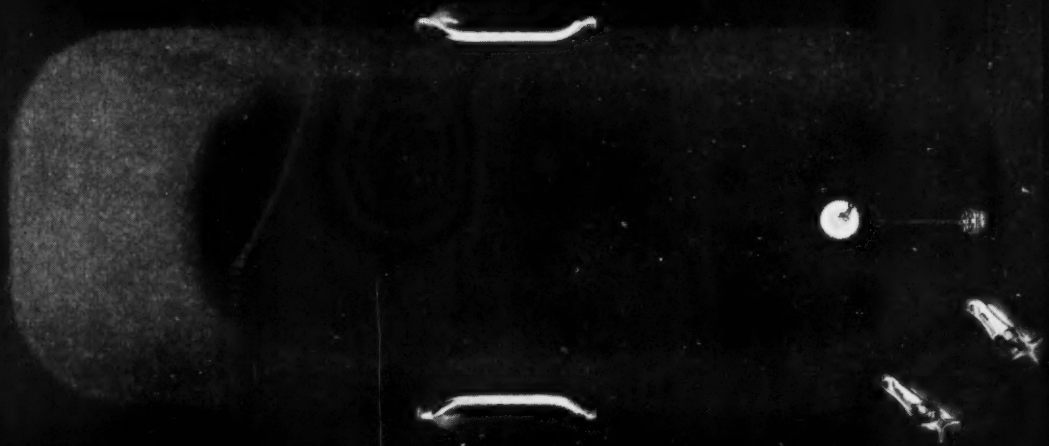
The aluminium interlocking facing strips marketed by Marsland & Company have already been mentioned in these notes, and this idea has now been followed by Stenmar Infil panels. These are made up to the required size by mounting the strips in an aluminium channel frame (see drawing), the bottom of which has a drip moulding so that it is not necessary to rely on a non-setting mastic for weatherproofing. The troughs on the reverse face of the strips provide enough air to prevent condensation. When insulated with ¼ in. polystyrene the panels have a U value of 0·19 and weigh about 1·3 lb. per sq. foot. Internal facings may be sheet aluminium, p.v.c., laminated plastic or hardboard, and the panels can also be supplied without the polystyrene infill if insulation has already been provided in the structure. (*Marsland & Co. Ltd., Stenmar Works, Conington Road, Lewisham, London, S.E.*13.)



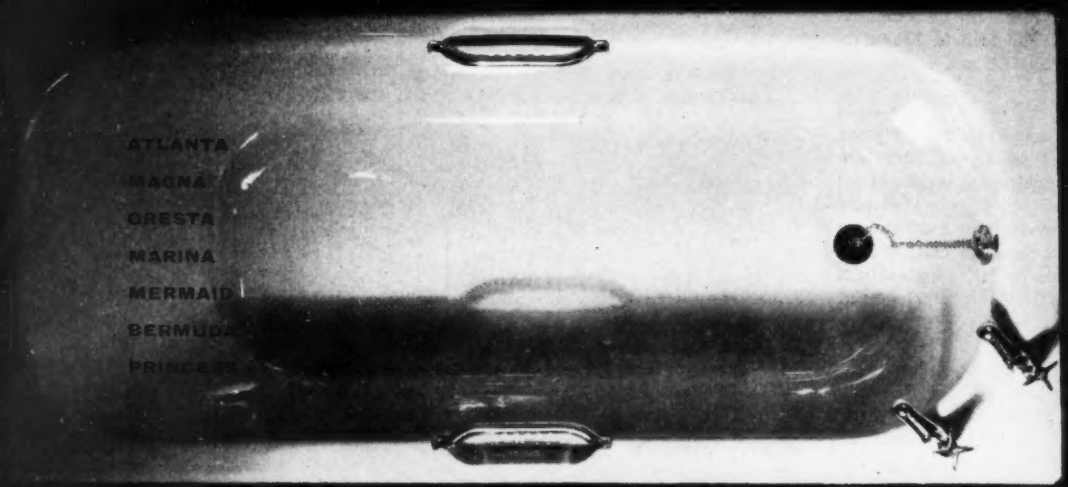

*Venesta Plymel w.c. compartments.*



For design, finish . . . choice of sizes and colours,



Architects need look no further than Bilston, the Bath Specialists




# BILSTON

Illustrated literature sent on request · Bilston Foundries Ltd, Bilston, Staffs

tech

**Corrugat**
Contirol
sheeting
lengths w
the width
rolls cont
is therefo
long light
also be a
turers say
be no sid
kind it c
tools. and
screws o
used for
and for w
at 6 ft.
from 4s.
to quanti
Transluce
in variou
price. At
the 3 in.
it may b
be made
country.
ported. (
39/41, *N*

**All plasti**
Fordham
white pla
complete.
thene, ta
valve. It
likely to
readily u
made to
*Dudley*

**Lightweig**
Lytag, pr
a synthet
from pul
cess. It is
to fine sa
40 to 57
honeycon
pores so
The stren
ing that
depends
aggregate
be, and
strengths
covers m
give the
a particu
aggregate
yard. The
tures of
high alu
linings, a
value it h
nary con
*Boreham*

**Figured**
To an al
rolled gla
six more.
thickness
4 ft. (*P*
*Lancs.*)

technical section

**Corrugated plastics sheeting in rolls**

Contirol is a glass fibre reinforced plastics sheeting which is produced in continuous lengths with the corrugations running across the width of the material. It is supplied in rolls containing lengths up to 30 yards and is therefore comparatively easy to lay in long lighting panels on roofs. There should also be a saving in material (the manufacturers say up to 10 per cent.) since there will be no side laps. Like other sheeting of this kind it can be worked with ordinary hand tools, and is fixed with hook bolts, drive screws or nails. Normal purlin spacings used for other types of roofing are suitable, and for vertical cladding or partitions rails at 6 ft. centres are adequate. Price varies from 4s. 3d. to 4s. 8d. per sq. ft. according to quantity, in widths of 6 ft. or 6 ft. 6 in. Translucent and opaque grades are made, in various colours, without any change in price. At the moment it appears that only the 3 in. corrugated profile is available, but it may be assumed that other profiles will be made when production starts in this country. So far the material is being imported. (*J. Weil & Son Ltd., Friars House, 39/41, New Broad Street, London, E.C.2.*)

**All plastic cistern**

Fordhams now have available their all-white plastic cistern which weighs only 7 lb. complete. It is made from high-density polythene, tank, ball float, syphon and ball valve. It is claimed that the syphon is unlikely to stick as lime deposits do not readily adhere to polythene. The cistern is made to BS 1125. (*Fordham Pressings Ltd., Dudley Road, Wolverhampton.*)

**Lightweight aggregates**

Lytag, produced by a Laing subsidiary, is a synthetic lightweight aggregate produced from pulverized fuel ash by a sintering process. It is available in sizes from $\frac{3}{8}$ in. down to fine sand and has a density varying from 40 to 57 lb. cu. ft., each particle being honeycombed with numerous microscopic pores so that it is about 60 per cent. air. The strength of a structural concrete, assuming that the aggregate is strong enough, depends on the water/cement ratio. Most aggregates are far stronger than they need be, and Lytag will provide compressive strengths up to 4,500 lb./sq. in., which covers most structural uses. It is claimed to give the same strength and workability at a particular density as other lightweight aggregates, but with less cement per cubic yard. The material will withstand temperatures of 1,000 deg. C. and can be used, with high alumina cements, for refractory linings, and because of its high insulation value it has better fire resistance than ordinary concrete. (*Lytag Ltd., Manor Way, Boreham Wood, Herts.*)

**Figured rolled glass**

To an already extensive range of figured rolled glasses Pilkingtons have now added six more. All are available with a nominal thickness of $\frac{1}{8}$ in. and in sizes up to 10 by 4 ft. (*Pilkington Bros Ltd., St. Helens, Lancs.*)

# INFORMATION CENTRE

*A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.*

A
711·4

## 4.87 planning: urban and rural

### URBAN RESIDENTIAL DEVELOPMENT

*Residential Renewal in the Urban Core.* By Chester Rapkin & William Grigsby. University of Pennsylvania Press/O.U.P. 30s.

This study from the Institute of Urban Studies of the University of Pennsylvania sets out to examine, in a systematic way, the extent of the market for new and "rehabilitated" residential accommodation in the central area of a large city. The example chosen is Philadelphia, a city that has done more than most others to promote urban renewal schemes. Recent trends in the housing market are first discussed and this is followed by an examination of the various factors influencing demand which are described in detail. Efforts are then made to measure the probable cumulative effects of each factor during the period January 1957-January 1970. The factors themselves include household growth, employment distribution, income changes, preference changes, and obsolescence. The main investigation is concerned with the probable market for flats, but some consideration is given to "single family homes."

In general, the conclusions tend to confirm what is already generally assumed—that the number of people who would prefer this type of accommodation is a small but significant proportion of the total and that in a free market the demand will never be very large. Conditions in British and American cities can only be compared in very general ways but it seems likely that a British study along similar lines would give results of a similar kind. The significant point is that in Britain studies of this type are almost never made. Here we are content to make a guess and rely on common sense and our system of planning controls to see us through. American planners have far fewer controls available to them and are obliged to follow market trends much more closely when preparing their schemes. The value of the book, for British readers, lies in the methods used. We could not make use of exactly similar methods—the data available on American cities are in a different form from our own—but studies along these lines for, say, the main conurbations would be an invaluable guide in planning our own badly needed urban renewal schemes.

A
621·7

## 18.212 construction; theory

### TIMBER DESIGN

*Fabrication Manual for Connectored Assemblies.* T.D.A. 1960. 3s. 6d. This is a publication intended to promote and encourage standards of fabrication and erection.

The Timber Development Association claims a remarkable growth in structural timber work during the last five years such that the Approved Manufacturers' group now has over a hundred firms on its list. Most of these concerns still restrict their activities to connectored assemblies and T.D.A. have felt it appropriate to issue a connectored assemblies manual. Its scope covers structural units whose joints are made by means of nails, screws, bolts and timber connectors and in such work anticipates the use of softwood, hardwood and plywood. It lays down quality standards for materials and offers guidance on the grading of timber and plywood components. Engineering practice in the workshop is next considered and in this section fabrication details are discussed and an indication is made of procedure appropriate to various methods of assembly. Other sections deal with site work inspection and maintenance and there are additional notes on preservation, handling, painting and storage. It refers to both B.S. 1860 and Design Code C.P.112 and one should appreciate that with the exception of hardwoods the latter deals with all aspects in greater detail than the T.D.A. Manual. Consequently the manual will be of little value to anyone already engaged in the design of structures of timber.

A
729

## 28.25 miscellaneous

### LETTERING

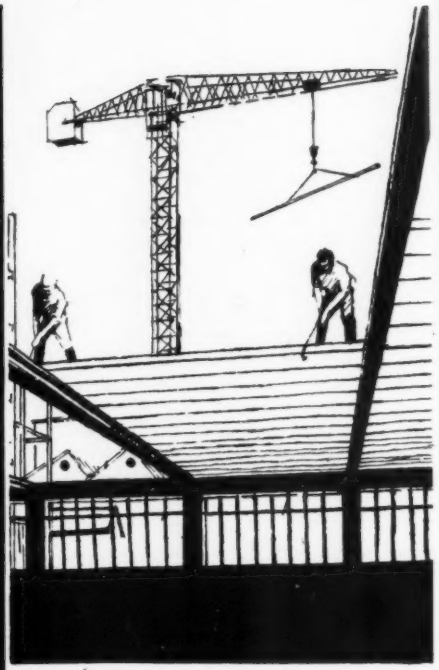
*Lettering on Buildings.* Nicolete Gray. Architectural Press. 25s.

This book has been developed out of a good series of articles which appeared in the Architectural Review. Nicolete Gray does not attempt to give a cut-and-dried answer for all (or indeed any) architectural lettering problems, but examines existing letters and their effect with care. An excellent introduction to a neglected subject.

**CLASSIFICATION FOR TECHNICAL ARTICLES AND INFORMATION CENTRE**

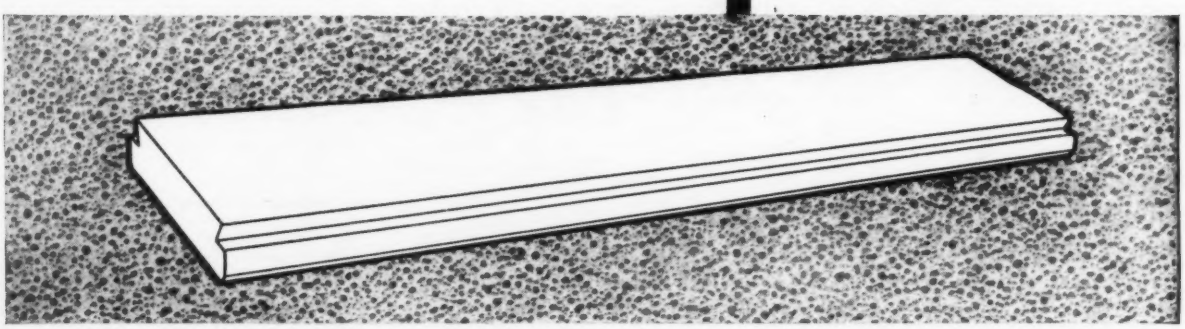
1 Sociology. 2 Planning: General. 3 Planning: Regional & National. 4 Planning: Urban & Rural. 5 Planning: Public Utilities. 6 Planning: Social & Recreational. 7 Practice. 8 Surveying & Specification. 9 Design: General. 10 Design: Building Types. 11 Materials: General. 12 Materials: Metal. 13 Materials: Timber. 14 Materials: Concrete. 15 Materials: Applied Finishes & Treatments. 16 Materials: Miscellaneous. 17 Construction: General. 18 Construction: Theory. 19 Construction: Details. 20 Construction: Complete Structures. 21 Construction: Miscellaneous. 22 Sound Insulation & Acoustics. 23 Heating & Ventilation. 24 Lighting. 25 Water Supply & Sanitation. 26 Services & Equipment: Miscellaneous. 27 Furniture & Fittings. 28 Miscellaneous.

# INDUSTRIAL ROOFING WELCOMES THE SIPOREX AGE



For over 25 years in widespread use in Northern Europe and many other parts of the world, SIPOREX, the lightweight cellular structural material *is now being manufactured here.*
Siporex revolutionises building techniques and offers architects and structural engineers many outstanding advantages.

- ★ 25 years successful experience all over the world are behind Siporex.
- ★ Over 30 million sq. yds. of Siporex roofing have already been laid, from the equator to the arctic.
- ★ Siporex is simple and rapid to erect—reducing site labour costs.
- ★ Siporex has a thermal insulation ten times that of concrete and is completely incombustible.
- ★ Siporex is only a quarter the weight of an equivalent volume of concrete, reducing the cost of structural framework and foundations.
- ★ Siporex compares favourably in price with other building materials.



**SIPOREX** THE MODERN LIGHTWEIGHT CONSTRUCTION MATERIAL

*Manufactured in Great Britain by:* COSTAIN CONCRETE COMPANY LIMITED *(A member of the Costain Group)*
DUNCAN HOUSE, DOLPHIN SQUARE, LONDON, S.W.1. SIPOREX FACTORY, NEWARTHILL, LANARKSHIRE, SCOTLAND

technical section

SfB File No. (21) G

UDC No. 69·022·325

# 17 CONSTRUCTION: GENERAL

## light cladding, 9: materials and finishes, concluded

This week R. Michael Rostron completes his review of materials used in light cladding.* Beginning with asbestos silica and asbestos cement, he passes to plastics (whether used as glazing, vapour barriers, insulation or adhesives) and finishes with the two materials associated with "heavy panels": concrete and stone.

**Asbestos Composites**

Both types of asbestos composites are made by mixing fibrous mineral asbestos with a binding material. Asbestos silica is marketed in this country under the proprietary name of "Asbestolux" and is made from amosite or blue asbestos fibres chemically bonded with high grade silica in a high pressure steam oven. The more common asbestos cement is a mixture of chrysotile or white asbestos fibres and Portland cement, the fibrous asbestos acting as reinforcement in what may be considered a thin reinforced concrete sheet.

The absence of Portland cement in asbestos silica ensures a very low alkaline content and a less brittle product than asbestos cement. In addition, the presence of numerous air cells in the amosite asbestos gives a very high degree of thermal insulation and a reduction in weight to about a third that of asbestos cement. Asbestos silica costs about 25 per cent. more than asbestos cement in sheets up to ⅜ in. thickness, whilst ½ in. sheets are about the same price. It has a very high moisture absorption and cannot be used externally unless protected. Even this is not advisable because, although asbestos silica is far easier to paint than asbestos cement, the possible failure of the protective coating would cause serious results. It is easier to paint than asbestos cement because of its low alkaline content, and is frequently used stove enamelled as a coloured backing to transparent or translucent glass panels. It is also very often used as an insulating core to bonded sandwich panels, since it is one of the few sheet materials which possess adequate strength and a low thermal transmittance.

Asbestos cement is a completely different material. As an exposed cladding material it has many attractive properties: low thermal movement, lightness, a high resistance to fire, cheapness and low maintenance costs. To be set against these advantages are a relatively high moisture movement, particularly in new sheets, and an extreme difficulty in colouring.

Since it was first manufactured in the 1890s, asbestos cement has been subject to unfortunate, if understandable, prejudices. Because its original development was concerned almost entirely with the production of a cheap and rapidly erected form of cladding to industrial buildings, asbestos cement sheeting has been neglected as one of the poor relations among building materials. For such buildings, it was not considered necessary to give any considerable attention to surface texture and details of fixing and the absence of colour and rusting of fixing bolts, together with the paucity of well-designed profiles and accessories, caused it for many years to be unjustly neglected. The fairly recent introduction of colour, of textured sheets, of more-considered profiles, making possible concealed fixings and (especially in Germany) of a wider range of accessories, have, to a great extent, overcome earlier prejudices.

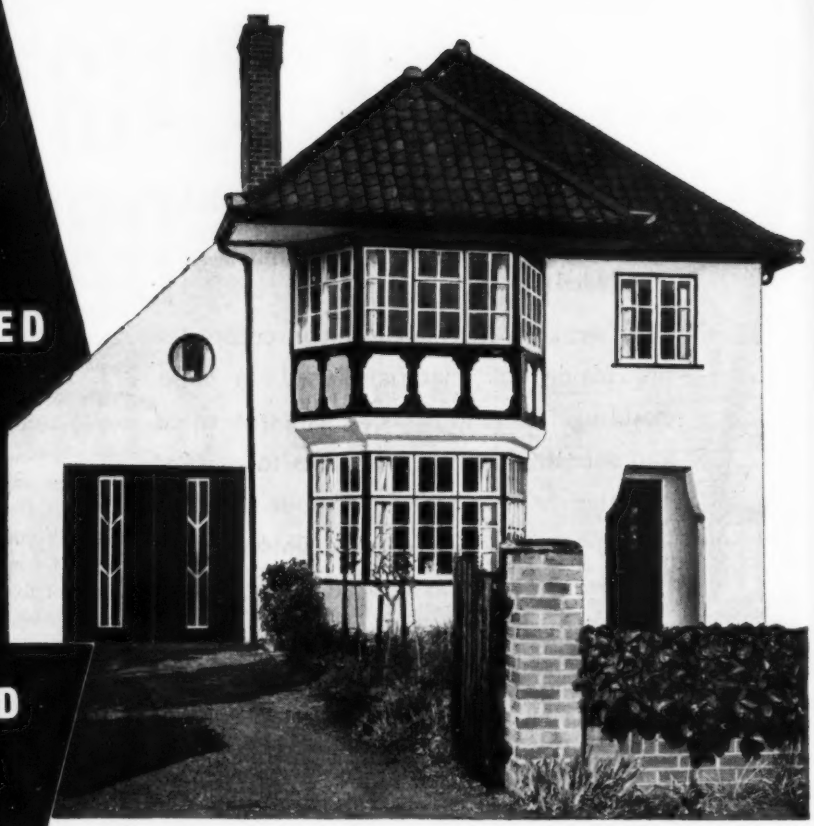
All asbestos cement products (with the exception of pipes) are formed from a basic flat sheet which is moulded when still wet and plastic into the familiar corrugated form as well as into textured, fluted, ribbed, dimpled and dished sheets. The maximum size of flat sheet is normally 10 ft. (12 ft. in special cases) long × 4 ft. 6 in. wide, which, when corrugated, produces a sheet with a net cover of 3 ft. 4 in. Thickness varies from 5/32 in. to ¾ in. Special machine-made profiles can be produced and are economical if, in terms of basic flat sheets, the quantity is not less than 25,000 ft. super. In common with most cement products, the strength of asbestos cement is far greater in compression than in tension and this fact has been exploited in the design of corrugated sheeting. Owing to the method of manufacture, there is no lamination and the product increases in strength with age, but it does tend to grow brittle. Proper maturing does much to reduce brittleness, but precautions should be taken to protect sheeting at low level, or thicker sheets should be used where greater risks justify the extra cost. Experiments have been made to strengthen the sheets by means of steel, jute and nylon reinforcement, but the results are at present rather costly. The most economically feasible method of increasing the strength of flat sheets is by densification under high pressure. Such fully compressed sheets are available commercially and cost about twice as much as standard sheets. They have a dense, smooth, easily cleaned surface of even texture which will take a polish, and are the only type of sheet which can be integrally coloured. They are well worth the extra cost if good appearance and strength are required.

* Previous articles in the series were as follows: Heat Transmission, February 25, 1960; Stability, March 3; Condensation, March 10; Fire Resistance, March 17; Sound Insulation, March 31; The Joint, April 28; Materials and Finishes, Metals, May 12; Materials and Finishes Timber and Glass, May 19.

THESE WALLS DECORATED AND WATERPROOFED FOR

# 4½d

PER SQ. YARD *(TWO COATS)*



WITH

# 'PUDLO'

## WATERPROOF CEMENT PAINT

- Contains the famous 'Pudlo' Waterproofing Powder
- Available in a range of 15 attractive colours
- Excellent Bonding and Spreading qualities
- Suitable for most types of wall surface
- Guarantees protection against all weather conditions

*'Pudlo' Waterproof Cement Paint can be used to protect all types of buildings but coverage will, of course, vary according to the porosity of the wall surface.*

**Write for Shade Card and Technical Specifications Nos. 3 & 4.**

Other 'Pudlo' products include: Cement Waterproofer, Cement Paint Primer, External Water Repellent, Cement Bonder, Plaster Bonder, Frost Protector/Rapid Hardener, Mortar Plasticiser, Cement Hardener/Dust Proofer, 'Feusol' Fire Cement.

'PUDLO'

*Sole Proprietors and Manufacturers:*

**KERNER-GREENWOOD & CO. LIMITED**

**KING'S LYNN · NORFOLK** *Telephone:* **King's Lynn 2293**

W.T.22

technical section

For many years colouring agents in asbestos cement proved unsatisfactory owing to the fact that evaporation of absorbed water produced efflorescence which disfigured the coloured surface and broke down the composition of the colouring agents of metallic oxide. Painting was even more difficult owing to the porosity and variable alkalinity of the sheets. Whilst many of these difficulties have been overcome, the colouring of asbestos cement is still a tricky problem and, unless factory colouring is used, painting should be undertaken with great care.

There are three methods of colouring asbestos cement in the factory. Integral colouring is the most durable, but requires a surface which is virtually non-absorbent and can therefore only be carried out with fully compressed sheets. The colour is mixed with the paste at an early stage in manufacture and consequently colours the sheet through its entire thickness. These sheets are ideal for use externally, but because of the varying colours of cement, colours must be fairly hard and the range is limited at present to grey, red-brown, green, yellow, and blue-black.

Two methods of applying coloured skins during manufacture are by means of coloured grains crushed into the surface of the sheet and polished with pumice after compression, and a floated, glazed and polished coating. With both methods the colour range is wider than integrally coloured sheets, and stippled and speckled colours are available, but the colour is only in the surface and not all colours are suitable for external use.

BRS have published detailed information on painting asbestos cement* and variable results are obtained with bitumen, cement, chlorinated rubber, silicone and polyvinyl acetate paints as well as limewash. Best results are obtained with chlorinated rubber paints, and the silicone paints, because they repel water and reduce absorption, have been successfully used. Site painting of asbestos cement is, however, fraught with difficulty and maintenance costs may be heavy. Wherever possible, factory coloured sheets, especially the integrally coloured fully compressed type, should be used.

All asbestos composites can be cut with a fine tooth saw, and asbestos silicate can be punched, drilled, nailed and screwed without difficulty. Asbestos cement must be drilled for all fixings at least 1½ in. from the edge of the sheet. Mastics should be used with care. Resin-based mastics adhere more readily to asbestos composites than other types and do not stain the panels, but oil-based mastics tend to stain panel edges as the oils are absorbed. This may be avoided by priming and painting both face perimeters and edges of untreated sheets before fixing, or a polythene edge tape may be used.

The durability of natural asbestos cement depends primarily on the degree of acid pollution in the air and in highly polluted atmospheres the solution of the cement by the acid will cause a slight softening of the surface. BRS has shown, however,† that atmospheric carbonisation of the surface, whilst reducing impact resistance, does tend to increase the transverse strength of the material. In other words, asbestos cement grows stronger but more brittle with age. It has also been stated‡ that "[natural] asbestos cement sheeting may be regarded as having a life of at least 30 years. There is, at present, insufficient experience of the material to ascribe it a life much in excess of this, and it is considered that if a longer life is required . . . fixing accessories more durable than galvanised iron or steel . . . should be used." BRS are at present carrying out an investigation into the weathering of asbestos cement cladding known to be over 25 years old. No results of this research are yet available and it will not include the comparatively recently developed fully compressed sheets. It would appear, however, that the use of such sheets and attention to fixing details will give a life well in excess of 30 years.

**Plastics**

Plastics are compounds of carbon with other elements, mainly hydrogen, oxygen, nitrogen and chlorine. The term embraces a large number of organic solids covering at least 30 distinct families and there are a vast number of subdivisions of each family. Continual research is increasing these numbers and it has been found that the molecular structure of some plastics can be modified by gamma radiation to produce, in effect, a different plastic which has greater strength and a higher melting point. In addition, the combination of plastics with other chemical compounds (copolymers) means that an almost infinite number of synthetic materials are available.

Fortunately for the author, only a few plastics are suitable for use in cladding. The principal groups are listed below and, to aid identification, some well-known trade names have been given.

*Formaldeyhyde Resin Plastics.* This is one of the largest groups used in building, but for exterior work only the phenolformaldehyde laminates can be recommended. Some of the paper filled melamine formaldehyde laminates ("Formica," "Warerite") have been successfully used externally, but the manufacturers neither recommend nor guarantee such use.

Plastics can be laminated with paper, cloth, wood veneer and glass fibre to increase their mechanical and insulation properties. "Holoplast" and "Corroplast" are paper filled phenolformaldehyde laminates, the former a hollow ribbed laminate and the latter corrugated. Both are opaque and have been successfully used externally and can be supplied in brown, terra-cotta and green integral colours as well as stove enamelled. It is likely that the stove enamelled finishes will eventually require repainting, but the integrally coloured panels are reasonably stable, although the surface gloss is quickly lost on exposure.

Phenolformaldehyde laminates are non-inflammable and resistant to most chemicals. They can be expected to remain structurally sound under normal weathering conditions for 20 years or more. They have a very high coefficient of expansion—more than three times that of steel—and require flexible fixing to accommodate thermal movement.

* *BRS Digest* No. 38. Painting asbestos cement. HMSO, Jan. 1952.

† Technical Paper No. 29: "Weathering tests on asbestos cement roofing materials." HMSO, 1946.

* CP 143.201 : 1951. Asbestos cement roof coverings.

# 'MALLITE' V-Groove Panels

## for New Premises at Manfield & Sons Ltd.

'Mallite' V-Groove Panels veneered in selected Nakora have been used with charming effect in the new premises of Manfield & Sons Ltd., at the Drapery, Northampton.
'Mallite' V-Groove panels are easy to work with and are of the highest quality. They are available in a wide variety of decorative finishes and very reasonably priced.




*Work carried out under the direction of*
Messrs. W. H. Girling and
R. J. Thorneycroft, M/M.S.I.A.
Shopfitting Dept. Manfield & Sons Ltd.
*Contractors:*
W. J. Richardson & Son, Northampton




**William Mallinson and Sons Ltd.**

TIMBER and VENEER MERCHANTS

130 HACKNEY ROAD, LONDON, E.2.

*Telephone: Shoreditch 7654* *Telegrams: 'Almoner' London*

MANUFACTURERS OF PLYWOOD · ARMOURPLY · PANELS AND COMPOSITE PARTITIONING

technical section

*Acrylic Polymers.* The use of acrylic polymers (" Perspex ") in aircraft proved their outstanding properties of light transmission (superior to glass), weather resistance, lightness and low thermal conductivity. They can be manufactured in a wide range of transparent colours and are non-splintering. Acrylic polymers weather well provided they are properly annealed and not subject to abrasion or cleaned with organic solvents such as petrol or trichlorethylene. They have an enormous thermal expansion ($\frac{1}{2}$ in. in 10 ft. for 160° F. change),which is almost twice that of aluminium and four times that of steel.

Because of their comparatively high cost, acrylic polymers are not a frequently used alternative to glass. Their cost may be justified where broken glass would be dangerous and corrugated Perspex sheets are sometimes used on staircase windows in schools. Their property of transmitting ultra-violet light may also be useful in some circumstances.

The fire resistance of Perspex is inferior to glass but, although it burns slowly, it is not readily ignited and can easily be extinguished. It is not regarded as more combustible than wood, but Perspex glazing is not permitted within the L.C.C. area.

*Reinforced Polyester Resins.* These have been extensively used in America, but have only recently been introduced to this country. They are usually reinforced with a glass cloth or fibre mat and " Filon " is a glass fibre and nylon reinforced polyester. Sheets are translucent and the appearance of woven glass cloth reinforcement is preferable to glass fibre. The light transmission of clear translucent sheet is 85 per cent., compared with 91–92 per cent. for Perspex, 90 per cent. for $\frac{1}{4}$ in. plate glass and 83 per cent. for $\frac{1}{4}$ in. wired plate glass. It is possible, however, that sheets may darken on exposure to sunlight. Polyester resins are not fireproof, but have a high melting point. They can be pressed at room temperatures and their reinforcement makes them shatterproof and imparts considerable strength to the sheeting. Manufactured sheets are $\frac{1}{16}$ in. thick and are available in several translucent colours. They can be sawn and drilled with ordinary tools.

*Polyvinyl Chloride and Polyethylene.* Flexible polyvinyl chloride (p.v.c.) and polyethylene (" Polythene ") in the form of resin films are used as vapour barriers and for temporary protection, but for continued external exposure only the black type of Polythene, containing inert non-toxic pigments, should be used. Polyvinyl chloride can also be extruded and is frequently used as a glazing spacer in tube form and (to a lesser extent) for jointing gaskets. It has a fair life in exposed positions, but the synthetic rubbers have a greater resistance to exposure and are more often used as gasket materials.

*Foamed Plastics.* Most synthetic resins have been successfully foamed for use as thermal and sound insulators, but only synthetic sponge rubbers, polystyrene, phenolics, ureas, isocyanates, vinyls and aminos are produced commercially. All tend to be rather brittle and their thermal values depend mainly on the amount of air in the foam. They are mostly used in cladding in sandwich panels, where they are protected from damage by rigid facings.

*Adhesives.* Many synthetic resins are used as adhesives, but for prolonged exposure to weather, modified phenolic, resorcinol-phenolic, melamine and epoxy adhesives are the most suitable.

Ordinary phenolic adhesives do not adhere well to metal and are rather brittle, but they can be modified with other resins, such as polyvinyl acetate and butyral. In modified state they have excellent strength and durability. They do, however, require curing for long periods at high temperatures. Phenolic adhesives modified with acrylonitrile rubber, on the other hand, can be applied in solution or as a dried film and are the most satisfactory of the phenolic adhesives for sandwich panels. Resorcinol-phenolic adhesives are durable under the most severe conditions and are easy to work, but are expensive.

The most recent development in synthetic resin adhesives is the epoxy adhesives. They are very durable and have excellent adhesive strength. They can be cured over a wide range of temperatures, and since they can be formulated without solvents, they are excellent for joining two impervious materials, such as two metals. Epoxy adhesives are, however, very expensive and must be mixed with a catalyst immediately before use. They also have a limited pot life and take a relatively long time to cure.

Plastics have probably the greatest potential of all cladding materials. In one of their multitude of forms they can be called upon to perform almost any function. Recent developments include plastic window frames, and opaque glass-fibre-reinforced polyesters in box-shaped tubes which incorporate flanges for windows and panels have been used as permanent shuttering to concrete frames. The future possibilities seem limitless, but it would be unwise to consider plastics as eventually replacing natural materials. Metallurgical research, for instance, is showing that the potentials of natural materials are by no means exhausted, and the wisest outlook is to consider natural and man-made products as mutually complementary.

**Heavy Panels**

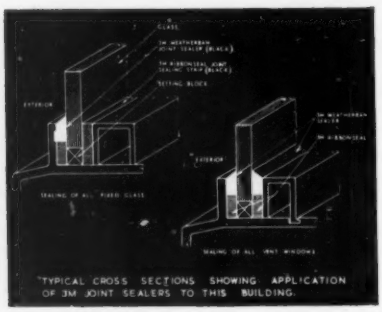
" Heavy panels " have been so termed because, although their density may not be greater than the " light " panels, the nature of their materials demands much thicker, and therefore heavier, panels. The most important of the heavy panels are those composed of concrete and the stones—limestone, sandstone, marble, and slate.

*Concrete.* Concrete cladding usually takes the form of precast, reinforced panels, although there is on the market a framing system composed of prestressed concrete mullions (see Fig. 1). Separate concrete panels may be used as the outer skin of a built-up composite wall, or concrete may be cast as a slab with a permanent formwork of woodwool to give a simple sandwich panel. Another type has a special concrete backing to receive a finish nailed into position.

However concrete is used, its properties and basic manufacturing procedure will be the same. Properly



OTTAWA CITY HALL, OTTAWA, CANADA



TYPICAL CROSS SECTIONS SHOWING APPLICATION OF 3M JOINT SEALERS TO THIS BUILDING.

**ARCHITECTS:**
*Rother, Bland, Trudeau, Montreal*

**GENERAL CONTRACTOR:**
*B. Perini & Sons (Canada) Ltd.*

**APPLICATORS:**
*Canadian Pittsburgh Industries Ltd.*

**JOINT SEALERS:**
*3M WEATHERBAN*
*3M RIBBONSEAL*

One of over 600 curtain wall buildings successfully sealed with

# WEATHERBAN

BRAND

The perfect and lasting joint sealer

## WEATHERBAN is one of the range of 3M adhesives and sealers for the building industry

**3M WEATHERBAN Brand Joint Sealer** is the perfect sealer for curtain walls, building panels, and expansion joints. It has excellent adhesive qualities, its elastic qualities are such that it will stretch to more than double its original joint width without failing and then return to its original size, and it does not shrink, making WEATHERBAN an effective and permanent weatherproof seal.

**3M Brand RIBBONSEAL Joint Sealing Strip** is a synthetic rubber sealer which can be used in glazing, between glass and rebate, between infill panels, between metal assemblies, or as a seal in double glazing units.

WEATHERBAN AND RIBBONSEAL are not new untried products—over 600 curtain wall buildings successfully sealed throughout the world prove their efficiency.

**3M APPROVED CONTRACTOR SERVICE** *is available for the application of WEATHERBAN where required. Copies of the full specification for the sealing of curtain wall structures can be obtained from 3M.*

PRODUCTS OF 3M COMPANY RESEARCH

**Made by MINNESOTA MINING & MANUFACTURING CO LTD • 3M House • Wigmore Street • London W1 • Hunter 5522**

ALSO AT BIRMINGHAM EAST 2051 • MANCHESTER DEANSGATE 8571 • GLASGOW CITY 6704

SP/ADM1

compressive strength, lb. per sq. in.

technical section



*Fig. 1. Prestressed concrete mullions (Gardiner's Muragard)*

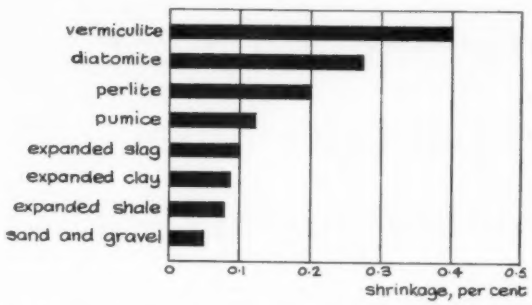



*Fig. 2. Average shrinkage in concrete after 100 days.*

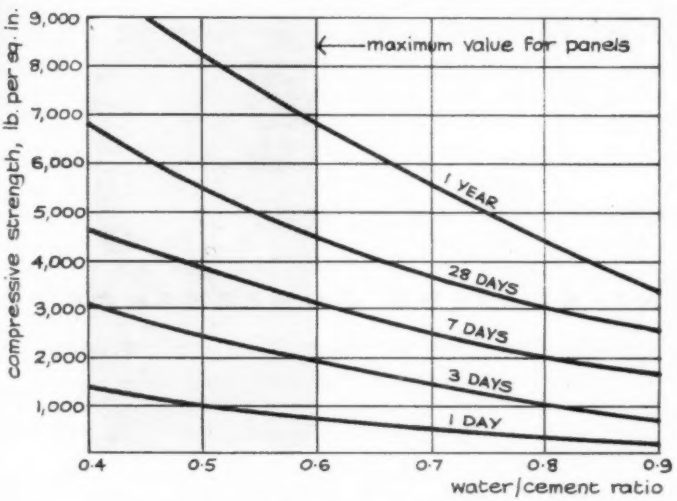



*Fig. 3. Effect of wetter/cement ratio of concrete on compressive strength.*

fabricated and erected, concrete panels are durable, of medium to low cost and maintenance, and can be manufactured in almost any shape and size. They are, however, heavy and comparatively thick, leading to transport difficulties and possible damage caused by faulty handling. Concrete shrinks considerably as it dries, the shrinkage of lightweight concretes being more than that of dense concrete. Although shrinkage will continue for 100 days or more after casting (see Fig. 2), the greater part will have taken place after four weeks. Shrinkage is not entirely predictable and, although formwork is accurately made, it is not possible to obtain a high degree of dimensional accuracy. Concrete tolerances have, therefore, to be greater than those for other materials, and this calls for flexible and careful detailing at joints.

Traditional aggregates for concrete are sand and gravel, but slag, expanded minerals, coloured granites, brown, black and calcined flints, shingle, spar and crushed stone have been used either to increase the thermal insulation or to improve the appearance of panels.

Durability and strength of concrete panels depend on four factors: the use of good, clean materials; a correct water/cement ratio; properly controlled curing; adequate cover for reinforcement. All materials, especially water, should be free from impurities* and aggregates should also be well graded by size. To increase factory production, the use of rapid hardening Portland cement is recommended, allowing moulds to be stripped after 24 hours, when the concrete has a minimum compression strength of 1,800 p.s.i.

The strength and durability of concrete are governed mainly by the water/cement ratio. Fig. 3 gives the curves for normal Portland cement after one, three, seven and twenty-eight days and after one year. For cladding panels a water/cement ratio of 0·6 should not be exceeded, but this can be reduced by 20 per cent. if the concrete is vibrated. Fig. 4 shows that the water/cement ratio also affects the porosity of the panel. In general, it may be said that the lower the water/cement ratio, the better will be the strength, durability and resistance to frost damage of the panel and the less will be the possibility of moisture penetration through the panel.

Fig. 3 shows that the compressive strength of concrete increases with age. After manufacture, precast panels should be covered with wet hessian or sand and moist cured at 70° F. for 15 to 48 hours. They should then be kept moist on both sides at normal temperatures for 3 to 7 days and then covered and stored for a further 3 weeks before use. Only by such curing can the panels gain adequate strength without crazing and can abnormal moisture movement after erection be avoided.

However small or secondary in importance reinforcement may be, it should have a minimum concrete cover on the weather surface of 1¼ in. Most corrosion failures and spalling of panels start with rusting of reinforcement or even binding wire, and the practice of clipping tying wires off flush with the finished concrete surface is to be strongly deprecated. Reinforcement composed of small-

* Sea water has been used but it reduces the ultimate strength of concrete by about 10 to 20 per cent.

# GLASS in PATENT GLAZING

the most **efficient,** the most **durable** and generally, the most **economical** method of **natural lighting** for industrial and operational buildings




*CONSULT THE PATENT GLAZING SPECIALIST*

**THE PATENT GLAZING CONFERENCE**

BURWOOD HOUSE · CAXTON STREET · LONDON · S.W.1

technical section

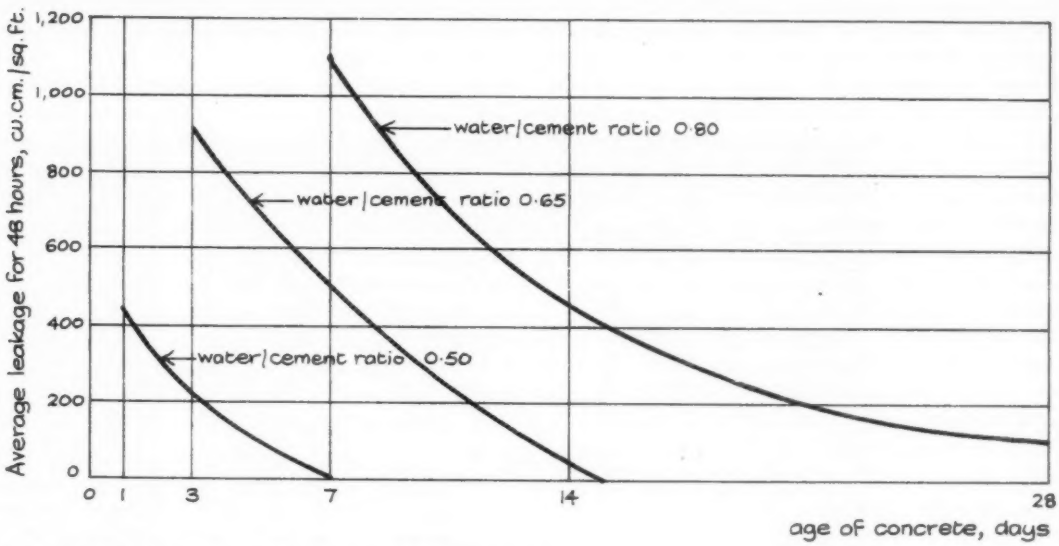



*Fig. 4. Effect of water/cement ratio of concrete on permeability.*

diameter wires at close intervals is preferred to a small number of rods, since panels may be thinner. Galvanised reinforcement may be placed rather closer to the surface (say 1 in.) but even so, panels thinner than 2 in. are not recommended and allowance should always be made for porous aggregates and for reduction of the effective cover by exposure of the aggregate.

The optimum size of panels will depend on erection procedure. If panels are to be manhandled, their weight should not be greater than about 150 lb., which, allowing for edge thickening of a 2 in. slab, gives an area of about 4½–5 sq. ft. If panels are to be mechanically handled, the largest possible size, with an economic maximum of 120 sq. ft., should be used. In either case, panels should be dished to reduce weight and to allow suitable edge thickness for jointing.

The appearance of natural concrete panels may be improved by exposing the aggregate by working or spraying the surface before hardening, by scrub or wire brushing and polishing or by acid washing after manufacture. The appearance will then be governed by the colour, character and size of the aggregate. The following table gives a rough guide to the maximum distance at which various sizes of aggregate will show as a texture:

| *Size of aggregate, in.* | *Distance, ft.* |
|---|---|
| 1½–1 | 350 |
| 1–¾ | 300 |
| ¾–½ | 200 |
| ½–⅜ | 115 |
| ⅜–¼ | 75 |
| ¼–⅜ | 60 |

These distances are not necessarily those at which the finish will be seen to the best advantage, which may be less than a quarter of maximum.

Surface patterning can also be given to the panels by using patterned timber, rubber or plastic moulds. Timber is used for large scale patterns and rubber or plastic sheeting for smaller scale texturing. Admixture colouring is generally unsuccessful, owing to uneven weathering. If colouring is required, a naturally coloured and exposed aggregate is the best solution.

Fixing details should be so arranged that the attachment is adjustable to take up manufacturing irregularities. The most common method is a bent hook bolt and sliding clip which engages on metal tee or angle framing. An alternative method is to use a threaded keyed socket cast in the concrete, tolerances being taken up by a square washer and bolt sliding on the framing. It is not advisable to cast bolts into concrete panels, owing to the danger of damage and rusting during handling. Fixing accessories should at least be galvanised, and bronze or stainless steel is preferable. Concrete pegs, used in the " Intergrid " system are an attractive alternative if accuracy in casting can be guaranteed.

For very large panels, some form of " hook-on " attachment, such as that used at the LCC's multi-storey flats at Roehampton, will relieve the fastening of the weight of the panel. These panels also used levelling and handling bolts screwed into threaded plates cast in the top edge of the panel. After adjustment and grouting, the bolts were removed.

Concrete panels, like those of other materials, will weather better if uniform rainwashing can be arranged. Medium coarse finishes, such as exposed rounded shingle and flint aggregates, are more self-cleaning than smooth or rough finishes. Smooth finishes will tend to streak despite the most stringent precautions, and very rough textures, especially in towns and manufacturing centres, will become dirty fairly quickly, although with a reasonable degree of uniformity.

*Stone.* Although stone has been used for centuries as facing to loadbearing construction, its use as light cladding (i.e., on a light secondary structure) is rare. The only apparent reasons for this are its low tensile strength, which requires thick and, therefore, heavy panels, and its high cost.

These are, in fact, the only limitations on the use of stone;

most types are resistant to weather and age gracefully. They are all fire resistant and the variety of colours, textures and finishes is wider than for any other material. The size of stone panels is limited by both manufacturing and handling techniques. Table 1 gives the minimum thickness and maximum available sizes of stone and concrete panels, and the weight per square foot of the material in minimum thickness. It is seen that weights are comparable with concrete and the handling of stone panels should not present greater difficulty than the handling of precast concrete.

The life expectancy of stones is usually assumed to be quite long, but, although certain marbles and granites last for centuries without significant wear, some soft, weak sandstones will deteriorate in 10 years or so. Generally, durability will depend on density, hardness and water absorption, and Table 1 gives the densities and comparable absorption of stones. The comparatively high absorption of limestone means that it will generally require some form of waterproofing treatment when used in thin slabs.

Polluted atmospheres, especially industrial atmospheres containing carbonic acid gas, will tend to break down and deteriorate stone. In such atmospheres, stones must be subjected before use to carbonic acid and sodium sulphate tests to determine their suitability. A further cause of decay is the conjoint use of limestone and sandstone and this should be avoided.

Because of their weight, stone panels require support (by means of projections, corbels, etc.) and holding (by straps, anchors, ties, cramps or dowels). Where stone comes into contact with ferrous metals, the metal must be well protected by galvanising and bituminous paint. Fixing accessories should always be non-ferrous (never "rustproofed") and stainless steel, bronze and slate are usually used. Copper is also used, but there is a risk of copper staining. Mastic, grout and pointing materials should be non-oiling and non-staining.

**Table 1—Properties of stones compared with concrete**

| MATERIAL | *Density lb. per cu. ft.* | *Minimum thickness* | *Maximum size* | *Weight lb. per sq. ft.* | *Average water absorption (marble = 1)* |
|---|---|---|---|---|---|
| Slate | 175 | 1 in.<br>1½ in. | 3 ft. × 2 ft.<br>5 ft. × 3 ft. | 15<br>22 | 10<br>10 |
| Granite | 170 | 2 in. | any practicable | 24 | 7 |
| Marble | 165 | 1¼ in. | any practicable | 17 | 1 |
| Limestone | 165 | 2 in. | 4 ft. 8 in. × 3 ft. 0 in. | 28 | 20 |
| Sandstone | 155 | 1½ in. | 10 sq. ft. | 20 | 10 |
| Concrete | 150 | 2 in. | any practicable | 25 | wide variation |

**CORRECTION**

The patent glazing dry joint illustrated in Fig. 17 of article 6 in this series (AJ, April 28, page 669) was the version manufactured by Williams and Williams Limited. Their name should have been included as were those of the other manufacturers whose products were illustrated. Further, the manufacturers inform us that the clip is not of spring steel, as designated on the drawing, but of aluminium. We regret both the omission and the error.

progress report

SfB File No. (98)

UDC No. 728·2




*A tall signboard for a tall block.*



*The model.*

# HIDE PLACE DEVELOPMENT FOR WESTMINSTER CITY COUNCIL

This is the first of a series of progress reports which will appear at two-monthly intervals. The cost analysis is based upon the contract sum; a further analysis, for comparison, will appear on completion of the work

director of housing — E. J. EDWARDS
architects — STILLMAN & EASTWICK-FIELD
assistants — R. SMORCZEWSKI, D. STOLLAR
structural engineers — CHARLES WEISS & PARTNERS
quantity surveyors — HARRY TRINICK & PARTNERS
who prepared the cost analysis

In August 1957, Westminster City Council asked Stillman & Eastwick-Field to design a housing scheme predominantly for old people. The site, near Vincent Square in Westminster, is bounded by Regency Street, Hide Place, Chapter Street, Esterbrook Street and Vincent Street and was to be developed at a density of 200 persons to the acre. It was decided early in the design stage that the only reasonable solution was to build high, freeing the bulk of the site to form a garden and car park.

The block is to consist of twenty storeys of dwellings raised above the ground with an open ground floor, and a club room, laundry and terrace on the roof. The building contains twenty four-room flats, eighty two-room flats and sixty one-room flats arranged eight flats per floor.

The scheme was fully preplanned and working drawings took eight months to produce, being completed in July 1959. The scheme went out to tender both as fixed price and lump sum contracts and the fixed price submitted by John Laing and Son Limited was accepted. The Contractor took possession of the site on the 21st September 1959.

The site investigation disclosed subsoil conditions typical of the Thames-side localities in Westminster, rubble-filled old basements, a good layer of compact sands and gravels and the London blue clay. Unfortunately however the lower levels of the gravel contained flaky soft clay particles unevenly distributed over the area of the building and the idea of founding the some 12,000 tons of the superstructure on a simple raft on the

progress report

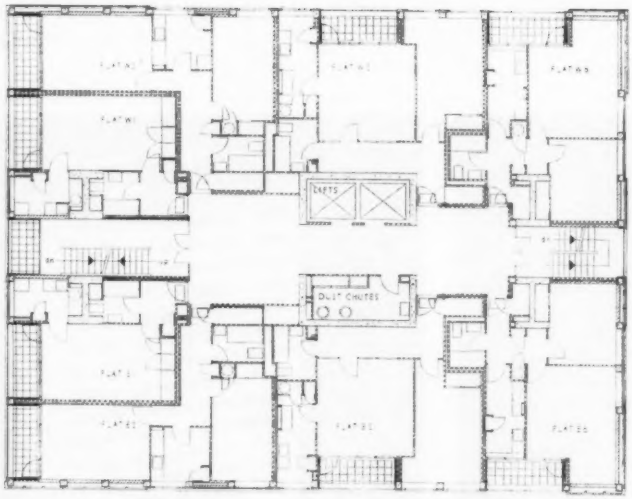



Site plan.

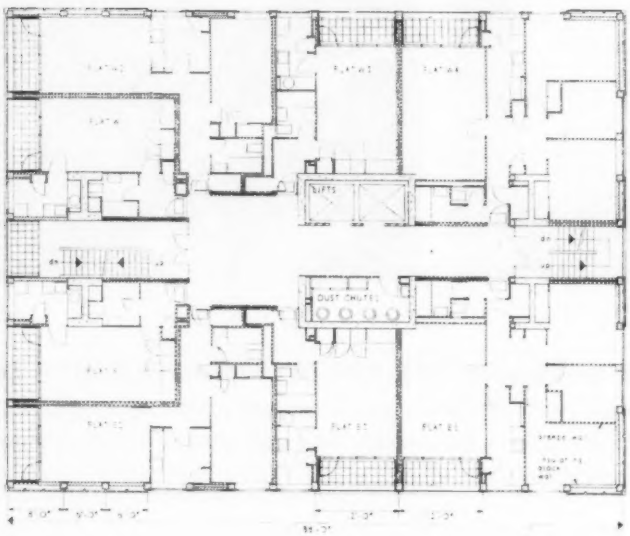




*Work went on all night when the concrete raft was poured, the whole operation taking 20 hours.*




Upper floor plan. [Scale: $\frac{1}{16}$" = 1' 0"]

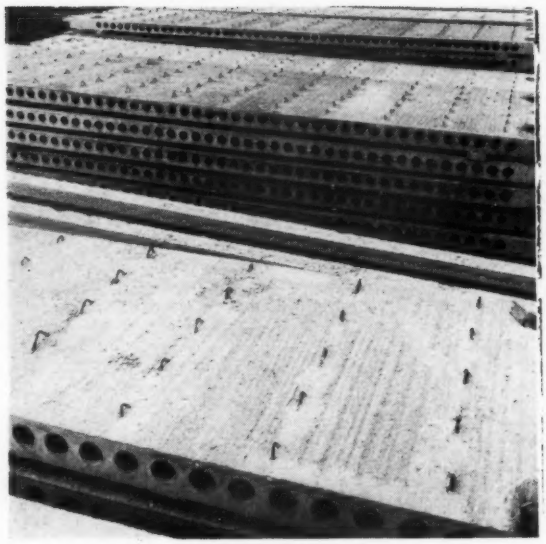



Lower floor plan [Scale: $\frac{1}{16}$" = 1' 0"]

top of the gravel had to be abandoned in favour of a bored pile system. The 24-in. diameter piles are, on the average, 60 ft. long and penetrate 30 ft. into the London clay transmitting the loads by friction and end bearing to the subsoil, each carrying about 85 tons. The test loading confirmed the calculated capacity of the piles and the application of two and a quarter times the working load did not cause failure. The close centres of the piles lead to the caps being constructed as a cellular raft over the central core of the building where the load concentration is the heaviest. The piling operation began on the 27th October 1959 and the last pile was constructed on the 3rd February 1960. The raft, containing some 350 cubic yards of concrete, was cast in one operation without construction joints and the concreting was completed in 20 hours.

In order to cut down on erection time the superstructure was designed as a series of precast concrete frames anchored by 22-ft. long by 6-ft.-wide precast floor slabs to an *in situ* core which takes the wind loading. The structural system which not only enables the upper floor units to be made while the lower units are being fixed but is also intended to allow the contractor to dispense with scaffolding, will be described and illustrated later. The duration of the contract is eighty-eight weeks including site works.

The contract price is £392,265, which includes £52,139 for foundations and external works, giving a net cost of 55s.6d. per foot super and a gross price of 64s, as the following cost analysis shows.





*Precast units under manufacture at Messrs. W. & C. French's factory awaiting delivery to the site.*

## DESCRIPTION OF STRUCTURE

Twenty-three-storey block of flats (including ground floor and two-storey roof buildings) 88 ft. by 68 ft. on plan and rising 210 ft. out of the ground. The block is founded on 24-in.-diameter piles and 5-ft.-deep raft beams and pile caps. The superstructure up to second floor level is constructed in reinforced in situ concrete and above this level in reinforced precast concrete frame units around the perimeter; these units are tied to a central core of in situ reinforced concrete lift, refuse chute and column walls, running the full height of the building, by precast reinforced concrete floor units bolted to the perimeter units and in situ core.

Externally the structure is cladded with precast reinforced concrete Norwegian quartz faced panels.

The external works comprise site clearance, outbuildings (stores, transformer, sub-station, caretaker's office and pump room), roads, car park, paved and grassed areas and boundary walling.

## SUMMARY

Ground floor area: 5,984 sq. ft.
Total floor area: 122,549 sq. ft.
Type of contract: Lump sum fixed price with quantities.
Tender date: July 3, 1959.
Work began: October 1959.
Contract price of foundations, superstructure, installations and finishes: £340,125.
Contract price of substructure and external works: £52,139.
Total: £392,264.

| | s | d | % |
|---|---|---|---|
| **Preliminaries and insurances** | 5 | 9½ | 10·4 |
| **Contingencies** | | 9¾ | 1·5 |
| **Substructure** | 5 | 5½ | 9·8 |

24-in.-diam. piling system to a depth of 60 ft., 5-ft.-deep r.c. raft beams and pile caps and 6-in. oversite concrete bed.

| STRUCTURAL ELEMENTS | *Cost per sq. ft.* s | d | *% of Superstructure* |
|---|---|---|---|
| **Open ground floor and foyer**<br>Structural columns and walls, glazed metal foyer screens and Yorkshire stone paving. | 1 | 0½ | 1·9 |
| **Reinforced concrete floor, frame and roof construction**<br>Reinforced concrete in situ first to second floors, in situ reinforced concrete lift, refuse and column walls, for full height of building, precast reinforced concrete perimeter frame and floor units. | 11 | 6½ | 20·8 |
| **Cladding panels etc.**<br>Precast reinforced Norwegian quartz faced concrete external cladding panels. Reinforced concrete precast external cladding panels with lightweight concrete or breeze cavity backings and small areas of western red cedar facing between same precast cladding panels. | 4 | 4½ | 7·9 |
| **Staircases, cat ladders, etc.** | | 3¾ | 0·5 |
| | | 2¾ | 0·4 |
| Reinforced concrete in situ ground to first floors and precast above. Mild steel cat ladder in lift motor room. Balustrades: mild steel, iroko hand rails. | | | |
| **Floor and roof insulation**<br>Fibre glass resin bonded slabs as required on roof and fibre glass quilt on floors. First floor insulation in cork and hollow clay pots. | | 6¾ | 1·0 |
| **Roof and balcony coverings, downpipes and cradle equipment**<br>Asphalt on cement and sand screeds and asbestos wearing tiles. | | 9¼ | 1·4 |

progress report

| | Cost per s d | % of Super-structure |
|---|---|---|
| **Windows** Western red cedar single light pivot hung windows in all flats with solid ventilation flaps over. Metal windows only to roof buildings. | 1 10½ | 3·3 |
| **External doors and screens** Standard flush and western red cedar doors and frames and western red cedar screens to balconies. | 1 3¼ | 2·3 |
| **Total of structural elements = 21s 11½d** | | |
| **PARTITIONS** | | |
| **Internal partitions** Generally lightweight concrete blocks and Fletton brick. | 2 7½ | 4·7 |
| Softwood and metal full height glazed screens. | 11 | 1·7 |
| **Internal doors** Standard flush doors and softwood frames. | 1 8½ | 3·1 |
| **Total of partitions = 5s 3d** | | |
| **FINISHINGS** | | |
| **Floor and stair finishings** Basically linoleum tiles on 2½-in. cement and sand screeds (under-floor warming requirement). Staircases self-finished (see Structural Elements). Granolithic paving in motor rooms, etc. | 3 0¼ | 5·4 |
| **Wall and ceiling finishings** Plaster | 2 6½ | 4·6 |
| **Internal decorations** Distemper on soffits and walls. Three oils on metal. Two oils on wood. Specialist polish on flush doors. | 11¾ | 1·8 |
| **External decorations** Preservative on western red cedar. | 0¾ | 0·1 |
| **Fittings** Basically free standing softwood dresser units and work tops. | 1 10 | 3·3 |
| **Total of finishings = 8s 5½d** | | |
| **SERVICES** | | |
| **Internal plumbing and sanitary fittings including builder's work** Single stack type cast iron waste and soil disposal. Galvanized main run services and copper services within flats. Porcelain enamel steel sinks, white glazed lavatory basins, high level w.c. suites, and 5 ft. 0 in. baths. High quality valves and traps to all fittings. | 3 9¼ | 6·8 |
| **Hot water installation** Calorifier in each flat and copper services. | 6½ | 1·0 |
| **Electrical installation** Normal domestic lighting and power, two immersion heaters in each calorifier. All night lighting in communal areas. Builder's work included. | 2 7½ | 4·7 |
| **Heating system** Under floor electric warming. Solidly embedded p.v.c. sheathed cable; flats individually metered. Builder's work included. | 1 0¼ | 1·8 |
| **Gas installation** Standard flat system. Builder's work inc'uded. | 3 | 0·4 |
| **Refuse disposal** Precast unit construction in central position. | 3½ | 0·5 |
| **Mechanical ventilation** Precast unit construction to ventilate internal bathrooms and w.c.'s. | 9¾ | 1·5 |
| **Special services** Lift installation: Two high speed ten person passenger lifts. Builder's work included. | 3 6¼ | 6·3 |
| Laundry: Two standard washing machines and one hydro-extractor, etc. | 1¾ | 0·3 |
| **Lightning conductor installation** Standard. | 0¾ | 0·1 |
| **Drainage** Combined soil and rainwater. | 2¾ | 0·5 |
| **Total of services = 13s 3¼d** | | |
| **External works** Site clearances, outbuildings (stores, transformers, sub-station, caretaker's office and pump room), roads, car park, paved and grassed areas and boundary walling. *N.B.* Drains, water, gas and electric mains included with superstructure. | 3 0½ | 5·5 |
| Total per sq. ft. of floor area = £340,125 (net cost excluding external works) / 122,549 sq. ft. (measured inside external walls) | = 55s 6d | |
| **Total per sq. ft. covering total amount of contract** | 64 0 | |

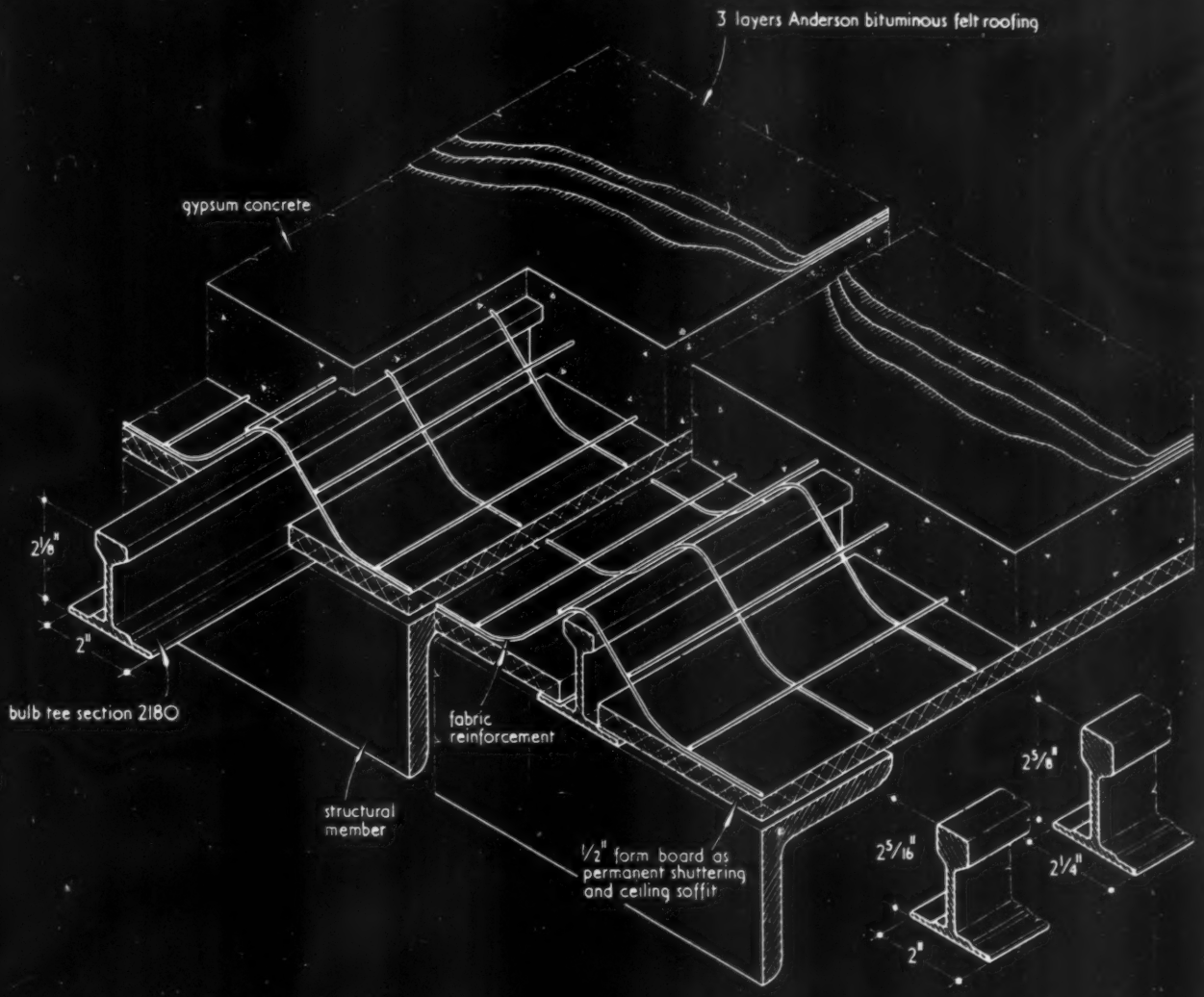
**CONTRACTORS**

*General Contractor:* John Laing and Son Ltd. *General Contractor's own nominations for precast concrete frames and slabs:* W. & C. French Ltd. *Demolition:* Lea Bridge Demolition Co. *Piling:* The Cementation Co. Ltd.

# ROOFS | CONCRETE

The Architects' Journal Library of Information Sheets 771. Editor: Cotterell Butler, A.R.I.B.A.

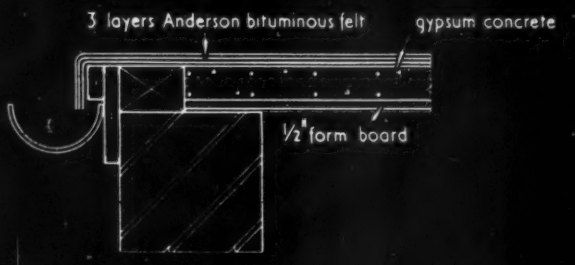




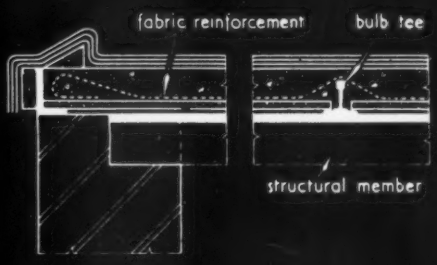

GENERAL ASSEMBLY OF ROOF



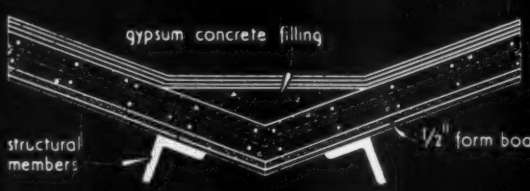

bulb tee sections 2228 and 2258



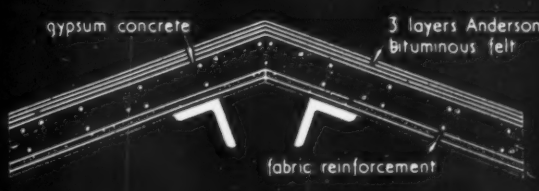

EAVES




VERGE




VALLEY




RIDGE

PYRODEK IN SITU GYPSUM CONCRETE ROOF — Manufacturers: D. Anderson and Son Ltd

# 20.D6 ·PYRODEK· IN-SITU GYPSUM CONCRETE ROOF

**This Sheet** describes the Pyrodek system of roofing, which consists of permanent formwork and poured gypsum concrete. It can be applied to a steel or reinforced concrete structure and is suitable for flat, low pitched or curved roofs.

### Construction

The roof is constructed as shown in the drawing on the upper face of the Sheet. Bulb tees are tack-welded to the purlins at right angles to them and form board placed on the flanges of the tees. Galvanised reinforcing fabric is placed over the tees and boards and the gypsum concrete poured. Fillets are also constructed from gypsum concrete. The drawings on the lower face of the Sheet show typical details at eaves, verge, valley and ridge.
The roof is finished with three layers of bituminous felt and surfaced with stone chippings.

### Sizes, Weights and Characteristics

Three sizes of bulb tee are available and their characteristics are as shown in the following table:

| Bulb tee section | Width (in.) | Height (in.) | Weight (lb./sq. ft.) | Moment of inertia (in.⁴) | Section modulus (in.³) |
|---|---|---|---|---|---|
| 2180 | 2 | 2½ | 2·88 | 0·5687 | 0·493 |
| 2228 | 2 | 2 $\frac{7}{16}$ | 3·65 | 0·852 | 0·738 |
| 2258 | 2¼ | 2⅝ | 4·67 | 1·386 | 1·056 |

The standard specification includes ½-in. Pyrodek form board and 2 in. of gypsum concrete which, with bulb tee section 2228, gives a weight of 12 lb./sq. ft. (15 lb./sq. ft. including the bituminous roofing).

### Safe Load-span Tables

The following tables give the safe distributed loads for various spans for the three types of bulb tee section in accordance with the recommendations of B.S. Code of Practice C.P.3: Chapter V: 1952: Loading. The roof should not be subjected to heavy loads while it is drying out to full strength: where more than light pedestrian traffic is anticipated, planks or similar must be provided. Pyrodek roofs can be designed to carry loads in excess of those indicated in the tables, but the standard design is only intended for normal light weight requirements.
The maximum spans (centre to centre of supporting members) for a superimposed load of 15 lb./sq. ft. is as follows:—

| Bulb tee section | Single | | Double | Triple | |
|---|---|---|---|---|---|
| | Stress | Deflection | Stress | Stress | Deflection |
| | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. |
| 2258 | 13 3 | 10 4 | 13 3 | 14 10 | 11 10 |
| 2228 | 11 0 | 8 9 | 11 0 | 12 4 | 10 0 |
| 2180 | 9 1 | 7 9 | 9 1 | 10 2 | 8 10 |

Where a superimposed load of 30 lb./sq. ft. is required the maximum spans are as follows:—

| Bulb tee section | Single | | Double | Triple | |
|---|---|---|---|---|---|
| | Stress | Deflection | Stress | Stress | Deflection |
| | ft. in. | ft. in. | ft. in. | ft. in. | ft. in. |
| 2258 | 10 9 | 9 1 | 10 9 | 12 3 | 10 4 |
| 2228 | 8 9 | 7 6 | 8 9 | 10 1 | 8 7 |
| 2180 | 7 4 | 6 9 | 7 4 | 8 3 | 7 8 |

The deflection figures have been reduced so that deflection with the self weight of the system and the superimposed load indicated will not exceed 1/250th of the span.

### Thermal Transmittance

The thermal transmittance for a standard Pyrodek roof is U = 0·38. For a higher degree of insulation various insulating form boards give a range of U values down to 0·16 (1-in. fibreglass).

### Fire Resistance

A Pyrodek roof was tested by the J.F.R.O. of the D.S.I.R. and the following is extracted from test report number 860:—

*A Pyrodek gypsum concrete roof approximately 3 in. thick was subject to a fire resistance test in which the soffit was exposed to the heating conditions specified in British Standard 476: Part 1. The specimen roof provided a barrier to the passage of fire for 2 hours 15 minutes when tested without imposed load on its upper surface. No collapse occurred, no cracks and holes formed through the specimen and the insulation provided by the deck prevented ignition of the bitumen on its top surface. The roof therefore provided fire resistance of the 2-hour grade.*

### Installation

The gypsum concrete is pumped into place by means of a special mobile plant, which automatically gauges the mix to ensure uniform quality. The gypsum concrete sets in approximately 15 minutes. The roof can take light traffic after 1 hour and the waterproofing can be applied after 24 hours. When set, the gypsum concrete is unaffected by severe weather conditions, e.g., heavy rain before waterproofing. Construction can proceed during heavy frost.
The gypsum concrete attains its full design strength only when dry and it is, therefore, desirable to dry it out as quickly as possible. The entire under surface should be ventilated so that excess moisture can evaporate through the formwork. The free circulation of air during the period of construction of the main building should be sufficient for this purpose, but where this is not so, mechanical circulation of air must be continued until all moisture is removed. Where suspended ceilings are installed special care must be taken to provide a natural or mechanical circulation of air between the ceiling and the roof slab until drying out of the latter is complete.

### Finish

The soffit should not be painted with a sealing paint until all free moisture has evaporated. Should decoration be desired before drying out is complete, Anderson Ancote PD grade, a special non-sealing paint, should be used.

*Compiled from information supplied by:*

**D. Anderson and Son Limited**
**Head Office:** Stretford, Manchester
**Telephone:** Longford 4444
**Telegrams:** Roofing, Stretford
**London Office:** Old Ford, London, E.3
**Telephone:** Amherst 9381
**Birmingham Office:** 97, Grange Road, Birmingham 10
**Telephone:** Victoria 5124
**Nottingham Office:** 17, Huntingdon Street, Nottingham
**Telephone:** Nottingham 53266
**Leeds Office:** 2, Central Road, Leeds 1
**Telephone:** Leeds 21403
**Glasgow Office:** 425, Scotland Street, Glasgow, S.1
**Telephone:** South 2233
**Belfast Office:** Short Strand, Belfast
**Telephone:** Belfast 57413
**Bristol Office:** 81, St. George's Road, Bristol
**Telephone:** Bristol 27888

Copyright Reserved. The Architects' Journal Library of Information Sheets. Editor: Cotterell Butler, A.R.I.B.A.

# COST ANALYSIS, PLANNING AND CONTROL: 3

This Sheet is the third of a series on cost analysis and gives definitions of the elements shown on Sheet 1.C1 up to and including *External doors:* Sheet 1.C4 gives definitions of the remaining elements. Sheet 1.C1 outlines the purpose and method of cost analysis and Sheet 1.C2 describes in detail the preparation of cost analyses and their uses.

### Definition of Elements

In Sheet 1.C1 a list of element headings was given, prepared at the request of the Architects' Journal by a group of architects and quantity surveyors for the publication of all types of buildings. This Sheet specifies the components or items of construction that belong under each heading.

### General Notes

*Descriptions:* The element cost should include all its significant component parts as indicated by these definitions. The description of each element should be sufficient to leave no doubt as to which items the cost includes, and should indicate the standard of quality of the work.
In cases where these definitions cannot be followed the description should make clear which items the element cost covers, e.g., if windows in curtain walling are included in External Walls, the element Windows should be marked—" included in External Walls."
If there is nothing to be allocated to a particular element, the word " nil " should be inserted against the element heading.

*Floor area:* The floor area used for calculation of the element costs is to be the gross area of enclosed floor space measured within the internal faces of external walls, over all internal partitions, stairwells, etc., except in the case of multi-storey dwellings in which it is to be the net area of the dwellings only, excluding areas of public access space. The analysis should state the gross area.

*Costs:* The total cost per sq. ft. of floor area should not include the cost of drains and of external works. If the contractor has adjusted his price on the Summary, this should be reflected in each element by proportional adjustment on measured builders' work.

### Preliminaries and Insurances

Priced items in Preliminary Bill and Summary excluding Q.S. fees and contractors' price adjustments (see *General Notes*).
Besides the cost per sq. ft. of floor area the element is expressed as a percentage of " whole cost of contract less preliminaries and insurances."

### Contingencies

Sums reserved for unforeseen expenditure.
If analysis is based on final account no cost is entered against this element.

### Work Below Lowest Floor

Work below underside of screed including damp-proof membrane, relevant excavation and foundations.

### Structural Elements

*Frame*
Loadbearing framework of concrete, timber or steel.
Main floor and roof beams, ties and roof trusses.
Casings to stanchions and beams where for structural purposes.

*Upper Floors*
Structural floors and balconies including structural screeds.
Beams other than main beams.
This element to include any suspended floors over basement in which case the heading should be *Upper floors* (*including floor over basement*).
Area of each type of floor (yards super).
Cost of each type of floor per yard super.
" All-in " unit rate per yard super.

*Roof*
Roof construction.
Beams other than main beams.
Gable ends, internal walls above wall plate and parapet walls.
Screeds and coverings.
Gutters, flashings and rainwater pipes.
Area on plan for each type of roof measured to external edge of eaves or parapet but excluding area of rooflights (yards super).
Area of glass in northlights and monitors (yards super)
Cost of each type of roof, etc., per yard super.
" All-in " unit rate per yard super.

*Rooflights*
Frame, glazing and opening gear.
Area of clear opening for each type of light measured parallel to roof surface (yards super).
Cost of each type of light per yard super.
" All-in " unit rate per yard super.

*Staircases*
Staircases and intermediate landings.
Finishes to treads, risers, strings and soffits.
Balustrades.
Number and total vertical height of each type of staircase giving width between strings.

*External walls*
External walls of building excluding windows, doors and shop fronts.
Curtain walling and sheeting rails (horizontal and vertical spacing and fixings to be given).
External applied finishes.
Lintels, sills and cavity damp proof courses.
If wall is self-finished internally this is stated.
If proprietary curtain walling is used area and cost is given as a whole including opening lights.
Area of each type of wall excluding window and door areas (yards super).
Cost of each type of wall per yard super.
Cost per yard super of basement walls.
Cost per yard super of superstructure walls.

## COST ANALYSIS, PLANNING AND CONTROL: 3

*Windows*
Sashes, sub-frames and frames.
Glazing.
Ironmongery where fixed before delivery to site.
Area of clear openings in walls for each type of window in square feet.
Cost of each type of window per foot super.
" All-in " unit rate per foot super.

*External doors*
Doors, frames and architraves.
Fanlights.
Glazing.
Ironmongery where fixed before delivery to site.
Area of clear openings in walls for each type of door in square feet.
Cost of each type of door per foot super.
Number of single doors and number of pairs of double doors.
Total cost per square foot.

*Compiled by John Carter, A.R.I.B.A.*

Copyright Reserved.
The Architects' Journal Library of Information Sheets.
Editor: Cotterell Butler, A.R.I.B.A.

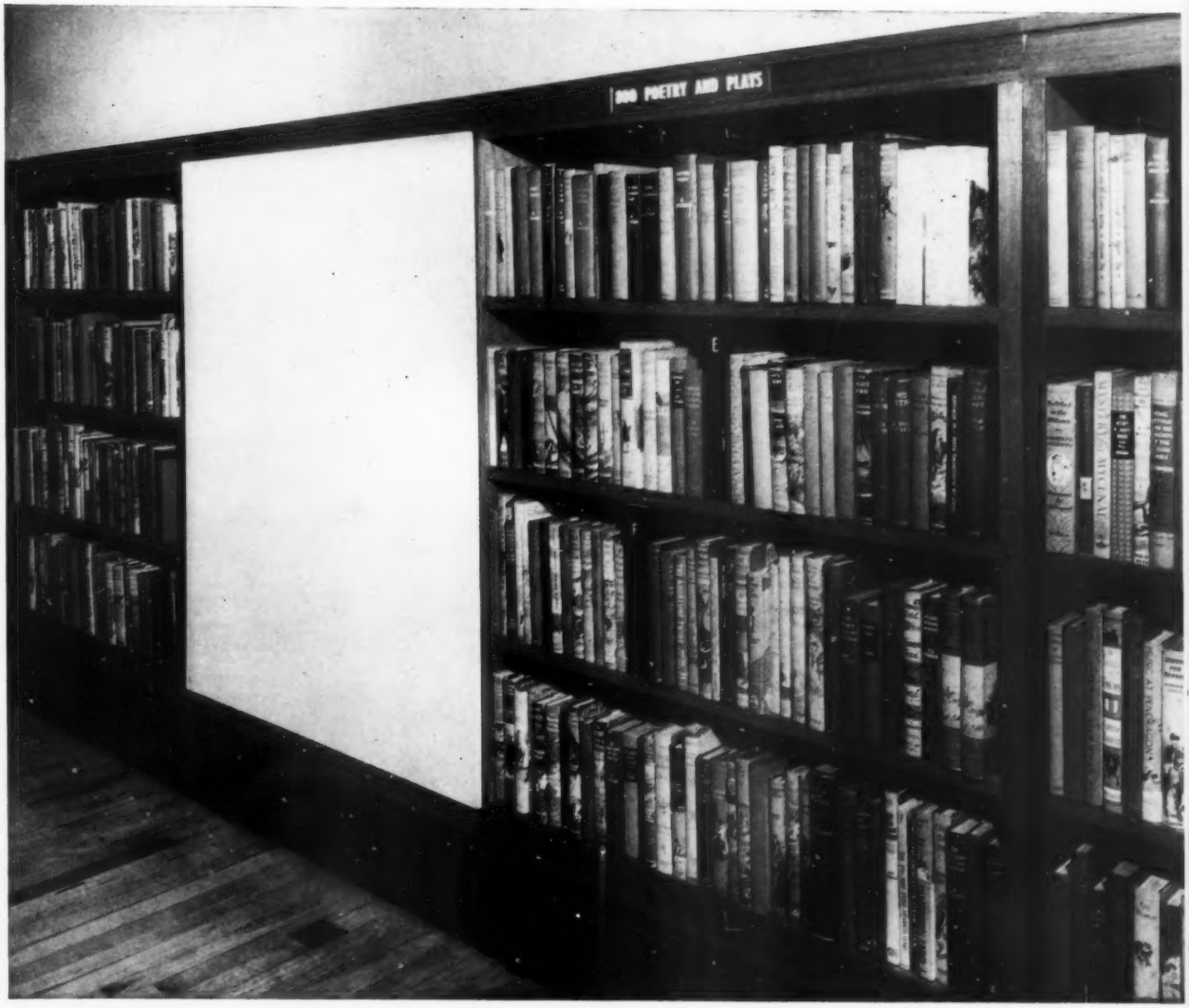


working detail



## BOOK SHELVES: CHILDREN'S LIBRARY IN LONDON, S.W.1

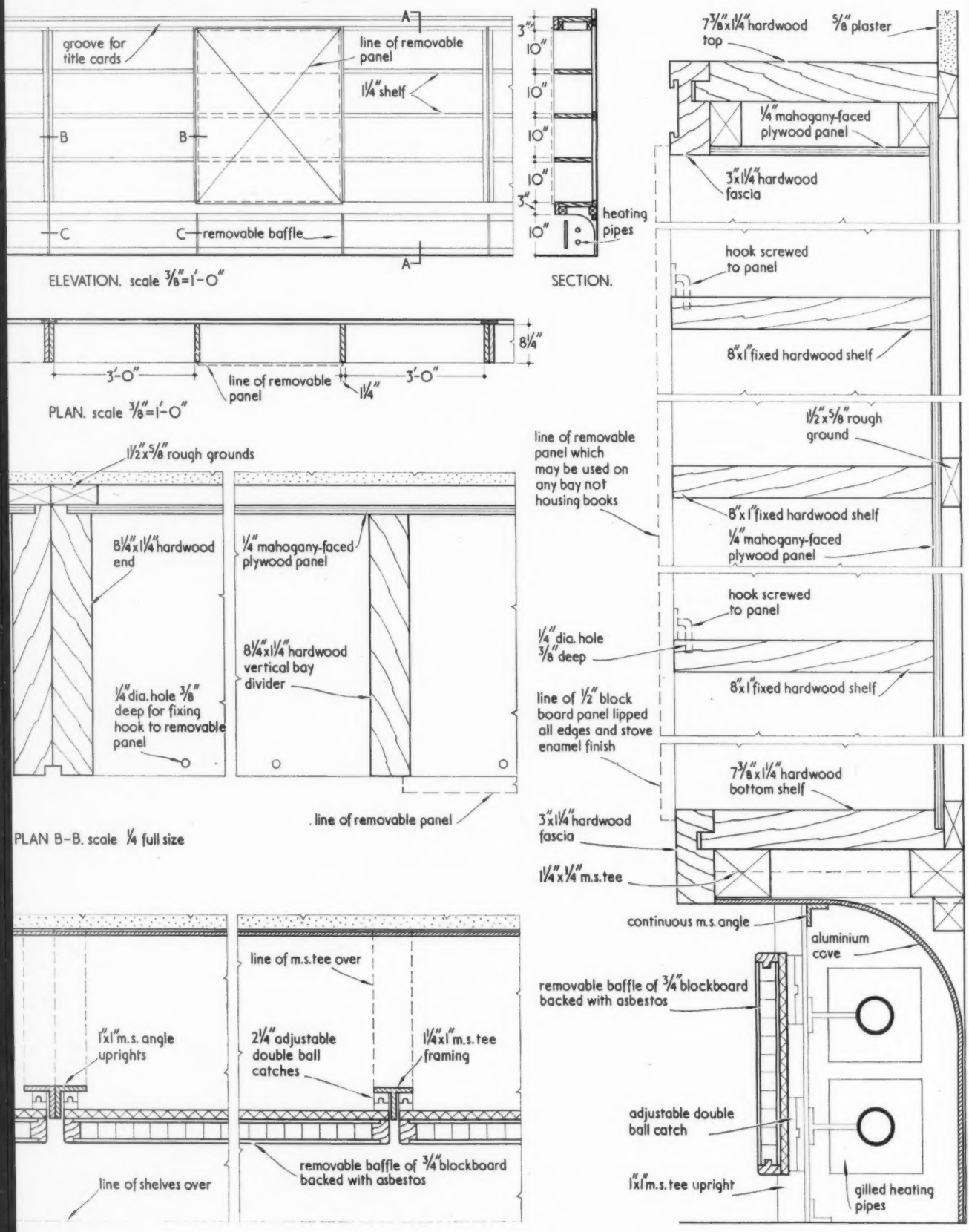
*Powell and Moya, architects*




*These shelves show a number of small innovations, among them the use of a movable board for blanking out sections not required for books and the insertion of an engraved Perspex title card in a groove sunk in the front edge of the top member. Note also the black removable baffle board which conceals the heating pipes.*

# BOOK SHELVES: CHILDREN'S LIBRARY IN LONDON, S.W.1

*Powell and Moya, architects*



# Endless colour at hand...

... adding permanent beauty and functional distinction in almost every staircase setting






*Pleasant to the touch, hardwearing, and completely flexible in installation Marleyrail is economical, and supremely adaptable to all commercial and industrial decorating schemes. In application it negotiates wreaths and bends without jointing, and is available in the eight harmonious colours illustrated*

# MARLEYRAIL

MARLEYRAIL is supplied in 60 ft. lengths and can be invisibly welded for greater runs.



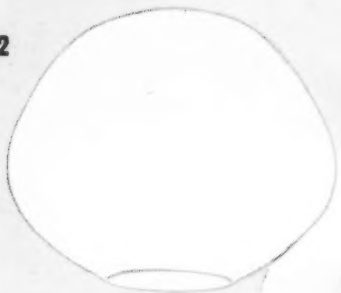
Available in three sizes, it will fit rectangular metallic or wooden core rails.

MARLEY · SEVENOAKS · KENT · SEVENOAKS 55255 London Showrooms at 251 Tottenham Ct.Rd. · W1

# new range



U52



U50

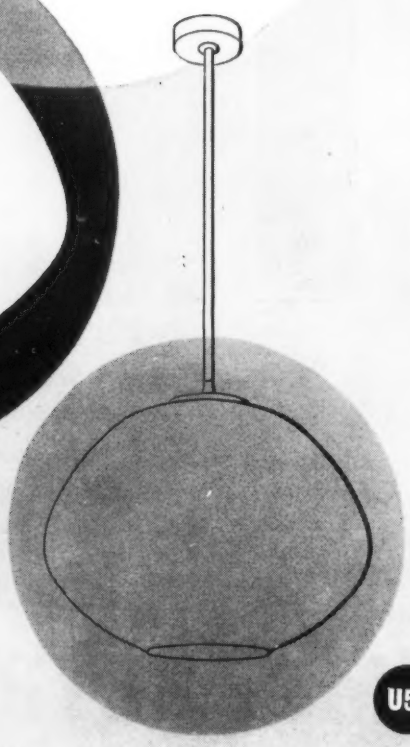
A new range of lighting fittings designed for general use, the glasses are of modern design with open ends to facilitate maintenance, the fixings are safe and simple. All glassware is British made 3-ply satin finish opal, reducing glare and providing an efficient, uniform distribution of light.



U51



U54



U53

*fine fittings by*

**TROUGHTON & YOUNG**

TROUGHTON & YOUNG (Lighting) LTD.,
*The Lighting Centre*, 143 Knightsbridge, London, S.W.1
*Telephone: KENsington* 3444
And at Rodney Street, Liverpool 1

RFW.41

## CONTRACTORS FOR BBC TV CENTRE (PAGES 957-961)

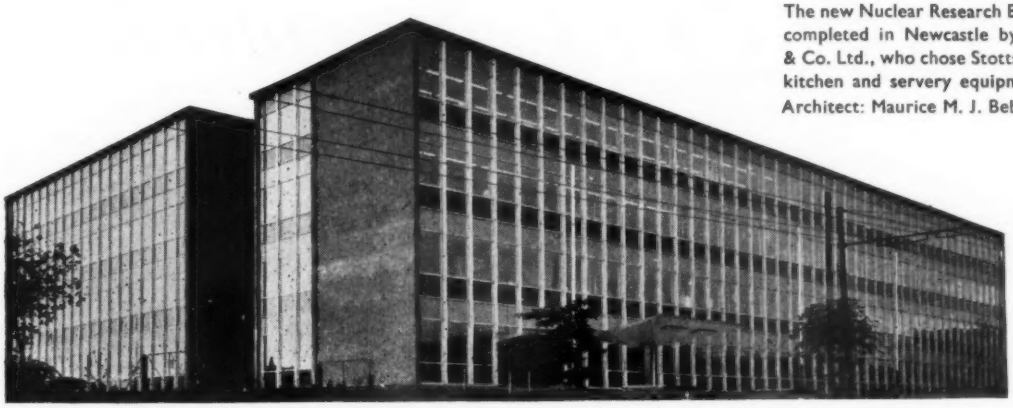
*Superstructure of the main block, scenery and restaurant blocks:* Higgs and Hill Ltd. *Foundations and retaining walls for main block:* George Wimpey and Co. Ltd. *Sub-contractors and suppliers: Telephone booths; open view grill window:* Ajax Architectural Products Ltd. *Cement glaze:* Collins (Contractors) Ltd. *Large sliding folding doors:* Esavian Ltd. *Track and cradles for window cleaning:* Palmer Travelling Cradle and Scaffolding Co. Ltd. *General ironmongery:* G. and S. Allgood Ltd. *Facing bricks:* R. Y. Ames Ltd. *Polishing:* J. R. Beadon Ltd. *Sanitary fittings:* John Bolding and Sons Ltd. *Heavy floor duct covers:* Broads Manufacturing Co. Ltd. *Heavy floor duct covers:* The Dover Engineering Co. Ltd. *Air conditioning and ventilation:* The Carrier Engineering Co. Ltd. *Cement:* The Cement Marketing Co. Ltd. *Acoustic ceilings:* Clark and Fenn Ltd. *Steel fixers reinforcement:* E. J. Cook and Co. Ltd. *Metal windows:* Crittall Manufacturing Co. Ltd. *Joinery—panelling etc.:* A. Davies (Shopfitters) Ltd. *Small rolling shutters and shutter grilles:* Dennison, Kett and Co. Ltd. *Screeds and granolithic floors:* E. J. Elgood Ltd. *Decorative ceilings and screens:* David Esdaile and Co. Ltd. *Ironmongery:* W. N. Froy and Sons Ltd. *Reinforcing bars:* G.K.N. Reinforcement Ltd. *Lightning protection:* J. W. Gray and Son Ltd. *Paint:* Hadfields (Merton) Ltd. *Building blocks, sand, etc.:* Hall and Co. Ltd. *Glazing:* John Hall and Co. (Bristol) Ltd. *Dressing room fittings:* George M. Hammer and Co. Ltd. *Large rolling shutters and fire doors:* Messrs. Haskins Rolling Shutters. *Lightweight aggregate :* The Isocrete Co. Ltd. *Structural steelwork:* T. C. Jones and Co. Ltd. *Mineralite paving slabs, precast concrete louvres:* Kendell's Stone and Paving Co. Ltd. *Special large acoustic doors to studies:* George W. King Ltd. *Studio floor finishes:* Korkoid Decorative Floors Ltd. *Notices, etc.:* The Lettering Centre. *Stairs, catwalks, galleries, etc.:* Light Steelwork (1925) Ltd. *Asphalt, linoleum flooring:* The Limmer and Trinidad Lake Asphalt Co. Ltd. *Common bricks:* The London Brick Co. Ltd. *Sheet metal work:* The Lucas Metal Working Co. Ltd. *Mosaic:* Marriott and Price Ltd. *Sprinkler installation:* Mather and Platt Ltd. *Plumbing, drainage and cold water supplies:* Matthew Hall and Co. Ltd. *Plumber's work:* J. Martin (Brockley) Ltd. *Precast work on fountain:* Modular Concrete Co. Ltd. *Lifts and escalators:* The Otis Elevator Co. Ltd. *General asphalt:* The Rock Asphalt Co. Ltd. *Heating and domestic hot water installations:* Rosser and Russell Ltd. *Scaffolding:* Scaffolding (Great Britain) Ltd. *Faience facings:* Shaws Glazed Brick Co. Ltd. *Flush doors:* Southerns Ltd. *Ballast etc.:* Henry Streeter (Transport) Ltd. *Vacuum cleaning plant:* The Sturtevant Engineering Co. Ltd. *General plastering:* W. A. Telling Ltd. *Duct liners and sprayed protection to steel:* Turners Asbestos Cement Co. Ltd. *W.c. and shower cubicles:* Venesta Ltd. *Pressed steel underfloor wiring ducts:* Walsall Conduits Ltd. *Wall tiling:* Wiggins-Sankey Ltd. *Terrazzo:* Zanelli (London) Ltd.

*Plant and equipment: Television electronic equipment: cameras, picture monitors, inlay equipment:* Marconi's Wireless Telegraph Co. Ltd. *Camera equipment:* E.M.I. Electronics Ltd. *Picture monitors:* Pye Ltd. *Transistor sync. pulse generators:* Ferguson Radio Corporation Ltd. *Camera lenses:* Taylor, Taylor and Hobson Ltd. *Television receivers for offices:* E. K. Cole Ltd. *Telecine equipment:* Rank Cintel Ltd. *Magnetic reproducers:* Rank Precision Industries Ltd. *R.F. distribution system:* Belling and Lee Ltd.

*Studio lighting and scenery handling equipment: Lighting control equipment and luminaires:* Strand Electric and Engineering Co. Ltd. *Luminaires:* General Electric Company Ltd. *Luminaires:* Mole-Richardson (England) Ltd. *Lighting and scenery hoists:* Knight Construction Ltd. *Audience seating equipment:* Rae Stage Equipment Ltd. *Cyclorama tracks:* Hall Stage Equipment Ltd. *Electric vehicles:* Omic Ltd. *Trailers for transporting scenery:* Low Loading Trailer Co. Ltd.

*Lighting fittings and equipment: Lighting fittings and equipment:* Reve Electric Co. Ltd. *Lighting fittings ans equipment:* Atlas Lighting Co. Ltd. *Lighting fittings and equipment:* Arrow Plastics Ltd. *Lighting fittings and equipment:* F. H. Pride Ltd. *Lamps:* Philips Electrical Ltd.


## C. A. Parsons & Co. Ltd. — another Stott installation



The new Nuclear Research Building recently completed in Newcastle by C. A. Parsons & Co. Ltd., who chose Stotts to supply their kitchen and servery equipment.
Architect: Maurice M. J. Bebb, L.R.I.B.A.

*Other recent orders for complete schemes by Stotts include*

City Training College, Sheffield.
Dr. Barnado's Home, London.
Doncaster Technical College.
Leeds College of Technology.
Rolls Royce, Derby.
The Royal Academy, Inverness.
Bristol-Myers Co. Ltd., Middlesex.
Austin Motor Co.
Shell Mex & B.P. Ltd., London.

*Please send full information of your Kitchen Planning Service.*

NAME.....

ADDRESS .....

.....

"Stotts of Oldham" VERNON WORKS OLDHAM · LANCS

# Announcements

PROFESSIONAL

The Department of Building Science of Liverpool University has undertaken an investigation into the design and construction of single-storey factories. The architect-in-charge of the project would be pleased to receive manufacturers' literature describing structures, roof cladding materials, thermal insulating materials and finishes suitable for manufacturing areas.

Arthur M. Jones, DIP. ARCH., A.R.I.B.A., has opened an office at Colchester Estate, Colchester Avenue, Cardiff (telephone 45521) and will be pleased to receive manufacturers catalogues and trade literature.

David A. Wilkie, F.R.I.B.A., and Partners have opened an additional branch office at 15, Clarendon Road, Watford (telephone Watford 28715) where they will be pleased to receive trade catalogues and technical literature. Representatives by appointment only.

R. J. A. Gazzard, A.R.I.B.A., A.A.DIPL., M.T.P.I., S.P.DIPL., F.R.S.A., Bank House, 118, High Street, Bromsgrove, Worcestershire, has been appointed Chief Architect to the Peterlee Development Corporation in succession to W. J. Scott, DIP.ARCH., F.R.I.B.A.

J. Singleton-Green, M.SC., M.I.C.E., M.I.STRUCT.E., F.INST.H.E., has started in private practice as a consultant on concrete at 24, Woodmansterne Road, Coulsdon, Surrey.

TRADE

The Dundee office of British Insulated Callender's Cables Ltd., has changed its telephone number to Dundee 25726/7.

J. M. H. Boutwood has joined the South East Region of Philips Electrical Ltd. as a representative.

G. H. Coy (Engineers) Ltd. have changed their name to Heatinaire Ltd.

Douglas N. Abercrombie has been appointed Director and General Manager of Jenson & Nicholson Canada Ltd.

Dunlop's Compositions Division has been re-named Dunlop Chemical Products Division.

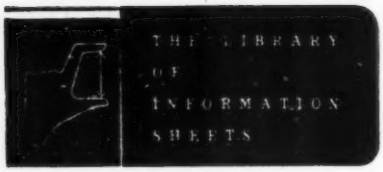
The Merchant Trading Co. Ltd. announce that Major A. A. Wedderspoon, O.B.E., will be relinquishing his executive responsibilities on June 30, but will continue as a director of the company.

J. M. Surral, a director of Simplex Electric Co. Ltd., has retired.

R. M. Atkinson has retired from the position of managing director of Sulzer Bros. (London) Ltd. and of Hathorn, Davey & Co. Ltd. and has been appointed chairman of the board of each company.

The Goodenough Engineering Group have opened new premises at Cheviot Street, Cheetham, Manchester 3.

John Westwood Ltd. have moved to 88/94, Tottenham Court Road, London, W.1 (telephone Museum 9851).




41.B2. REFERENCE BACK

Readers are asked to note that on the face of the Sheet under the heading "Specification Notes,' sub-heading "Materials," first paragraph, the alloy H10 should be altered to H19.

32.Z1. REFERENCE BACK

Readers are asked to note that on the face of the Sheet, drawing headed "Typical Installation," the positions of the flow and return pipes to the heat pump should be reversed where they join the cabinet.

# Correction

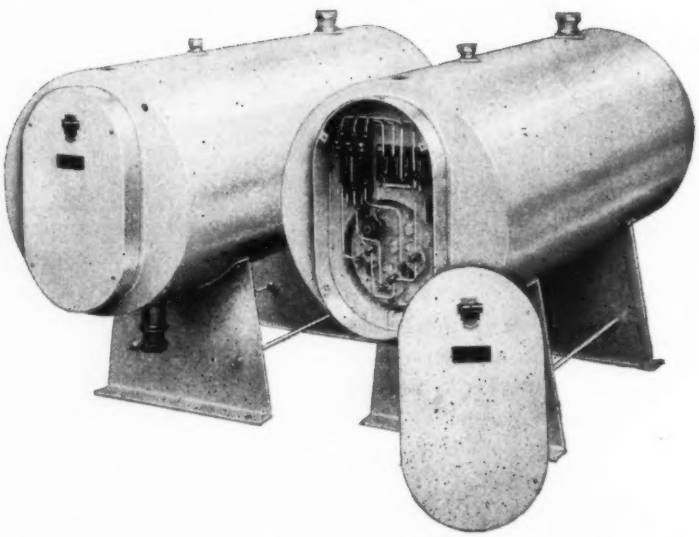
We have been asked by Roman Halter and Edward H. Hartry to point out that the commended design (No. 15) in the Halesowen achitectural competition was in fact submitted by Wells, Hickman & Partners, in which firm Messrs. Halter and Hartry are partners.

Heatrae of Norwich

HEATRAE CALORIFIERS

Heatrae Calorifiers are made in a wide range of water capacities and loadings. They can be used as independent units or alternatively as a heating unit to work in conjunction with a hot water storage system. Whatever the application, they are dependable and will give years of trouble free service.

Send us your enquiries.



HEATRAE LIMITED

Postal Code: NORFOLK NOR 29A. 'Grams: HEATRAE, NORWICH.
Telephone: NORWICH 25131 (Private Exchange)

Manufacturers of Electric Water Heaters, Oil Heaters, Immersion Heaters, Urns, Towel Rails, Airing Cupboard Heaters, Electric Fires, Flameproof Heating Apparatus, Food Trolleys, Warming Plates, Air Heaters.

# FLEXPIPE'S EXTRA 2ft LENGTH



# CUTS COSTS!

## Longer lengths cut laying time

Flexpipe—the latest development in pitch-fibre piping—comes in 10 ft. lengths instead of 8 ft. This means that any length of piping can be laid as much as 20% faster with Flexpipe than with any other pitch-fibre pipe—an important saving in labour costs.

## Less jointing cuts material costs

This extra length also reduces the number of joints needed on any job—a valuable saving in time and labour costs.

*Flexpipe is available NOW in both 4" and 6" internal diameters—and costs no more than other pitch-fibre pipes.*

### AND REMEMBER FLEXPIPE HAS THESE OTHER ADVANTAGES

(a) Much easier to transport, stack, and handle—one man can carry three or four Flexpipes at a time without any sense of strain. If he drops them — they're unbreakable! (b) No jointing compound required: Flexpipes are joined together with a coupling that can be simply knocked on with a hammer and a block of wood. The joint is then completely sealed. (c) Flexpipe cannot crack under earth movements and is corrosion-proof. (d) It can be sawn to any length as easily as wood.

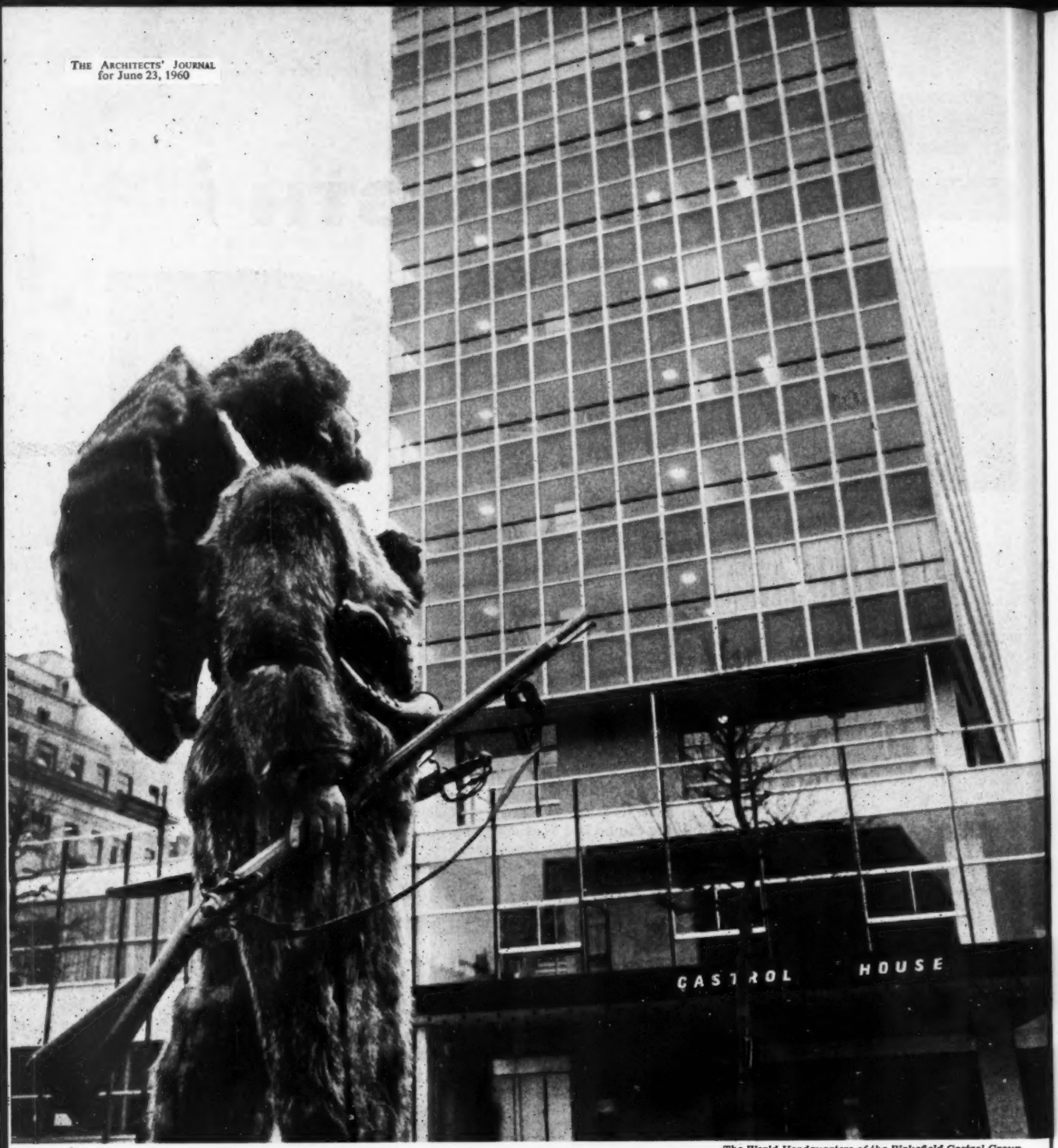
**LIKE TO KNOW MORE?** *Send for Flexpipe literature or let us put our representative in touch with you. Or both.*

# Flexpipe

## PITCH-FIBRE PIPES

FLEXPIPE LIMITED, Bowater House, Knightsbridge, London, S.W.1. Tel: KNIghtsbridge 7070. Now a member of the Bowater Organisation

CEC1




*The World Headquarters of the Wakefield Castrol Group*

# We're your Man Friday

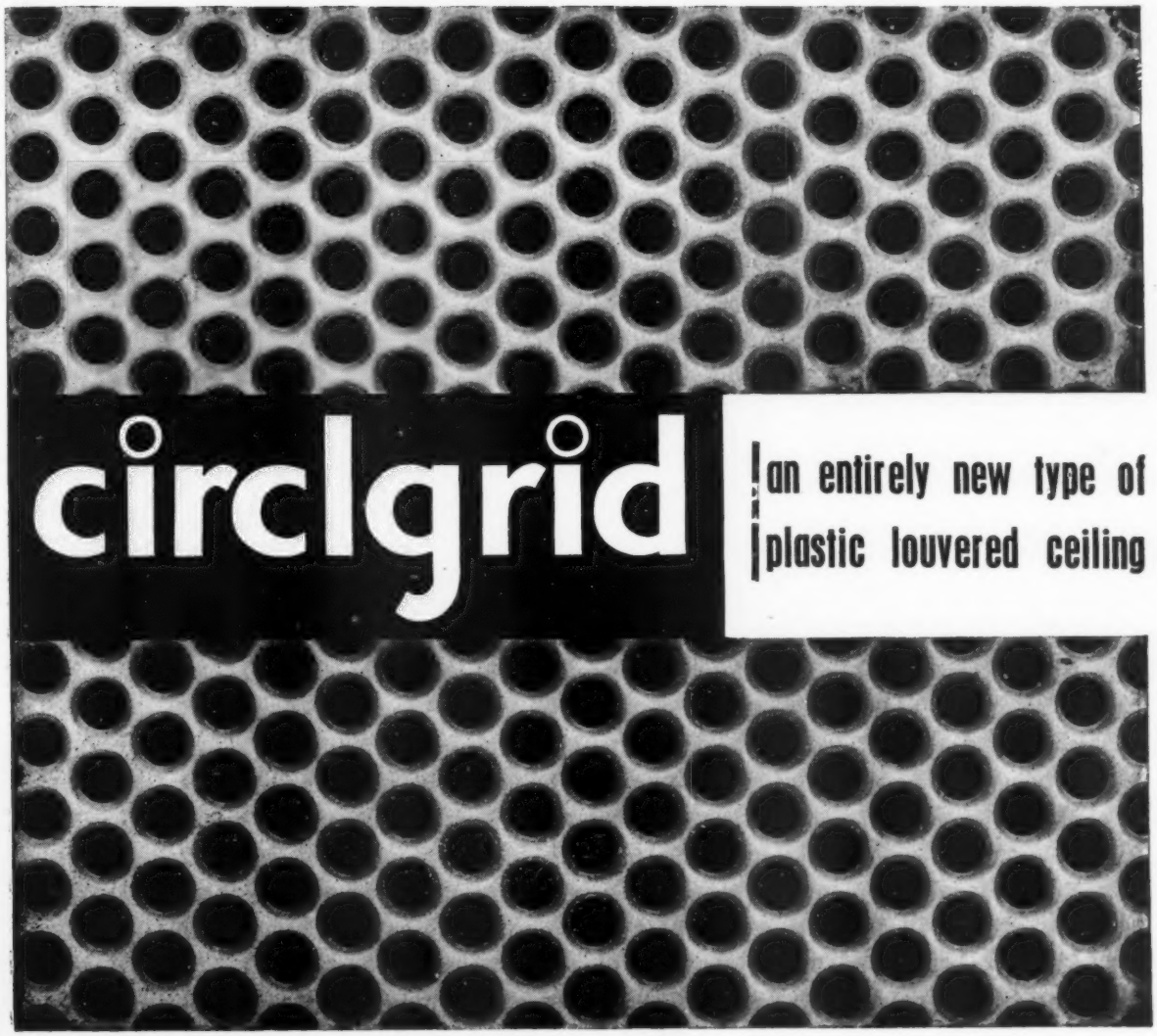
## ...WHEN IT COMES TO FINDING THE RIGHT **CURTAIN WALL SEALANT**

Any sealing problems you're likely to run up against with a curtain wall structure have been solved (or will be solved) by Bostik research. The ready answers take the form of a range of special formulations called BOSTIKOL Curtain Wall Sealants. All are applied in liquid form, cure in position without shrinking, and form tough rubber-like solids to give a permanent weathertight seal. And Bostik research has anticipated the widely differing conditions and circumstances in which curtain wall sealants have to be used. That is why BOSTIKOL is produced in a wide choice of grades, providing different physical characteristics, especially in shore hardness and modulus. *One last word about Bostik research: If you've any problem to do with sealing or bonding building materials, don't hesitate to get in touch with us. It's our job. We may have solved your problem already. And if we haven't, we'll get down to it right away.* Write to BOSTIK BUILDING ADVISORY DEPARTMENT, B.B. CHEMICAL CO. LTD., Leicester.



ALWAYS ONE USEFUL STEP AHEAD **Bostik**

*The word BOSTIK is a trade mark registered in the United Kingdom and many other countries.*



# circlgrid

## an entirely new type of plastic louvered ceiling

- NON-FLAMMABLE — it is made of P.V.C.
- RIGID AND LIGHTWEIGHT — less than 3½ oz per square foot
- SIMPLE TO INSTALL — it consists of 2 ft x 2 ft panels held in a light aluminium frame
- ELEGANT IN APPEARANCE — the circular louver cells give it a unique surface texture
- GIVES EXCELLENT LIGHT CONTROL — the design of the louver cells permits low surface brightness with a high overall efficiency

Tiles are vacuum-formed from three P.V.C. sheets electronically sealed to make a rigid structure. Three finishes are available

*CIRCLGRID IS ONE OF MANY HARRIS AND SHELDON SYSTEMS WHICH ARE SOLVING EVERY TYPE OF LIGHTING PROBLEM*

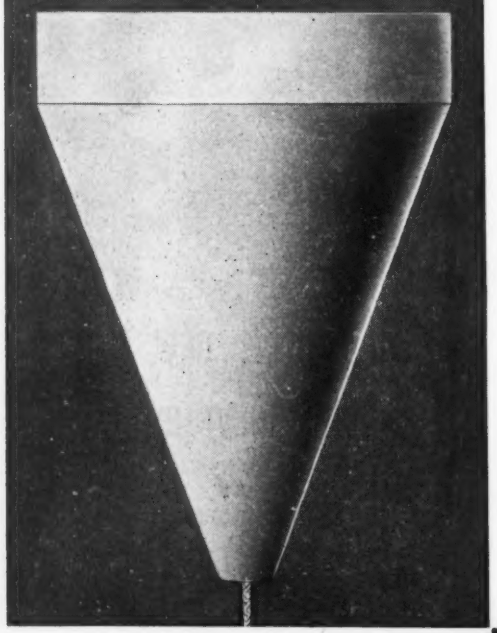
FULL DETAILS ON REQUEST

**Harris & Sheldon ELECTRICAL Ltd**

RYDER STREET BIRMINGHAM CENtral 6272 · 46 GT. MARLBOROUGH ST LONDON W1 GERrard 0869

*THE HARRIS AND SHELDON GROUP OF COMPANIES · SHOPFITTING · INTERIOR DECORATION · DISPLAY*

# FALKS



## *new* "CORDCONE"
## *ceiling switch*

**The 13 amp. 250 volt ceiling switch with full inductive rating. Available in single pole 1 and 2 way, double pole 1 way, with or without pilot light, brown or ivory.**

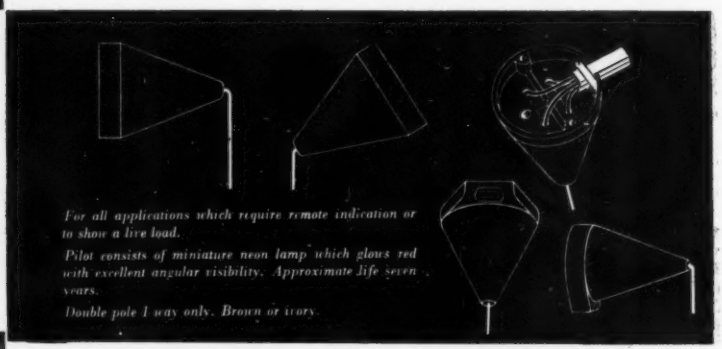
- ✳ *One rating only for domestic, commercial or industrial use, either lighting or power.*
- ✳ *Series break contacts particularly suitable for motor or fluorescent load. Will control up to thirty 80-watt fluorescent tubes and single phase motors up o ½ h.p. capacity.*
- ✳ *Single pole 1 or 2 way; double pole 1 way; 2 in. fixing centres.*
- ✳ *Double pole pattern available for bathroom fires.*
- ✳ *Easily replaceable cord.*
- ✳ *Completely insulated with no visible fixing screws.*
- ✳ *No dust traps.*
- ✳ *Ample cable stowage in base, terminals take 2×7/·029 cables.*
- ✳ *Conforms to B.S.2652 : 1955 for cord operated switches.*

Pattress available to assist compliance with 207G 13th Edition I.E.E. regulations. Pattress also supplied with integral looping in terminal.

Operates successfully with cord at any angle up to 90° from vertical.

✳ *Special cable clamp available for use with surface wiring. Surface knockouts are provided.*

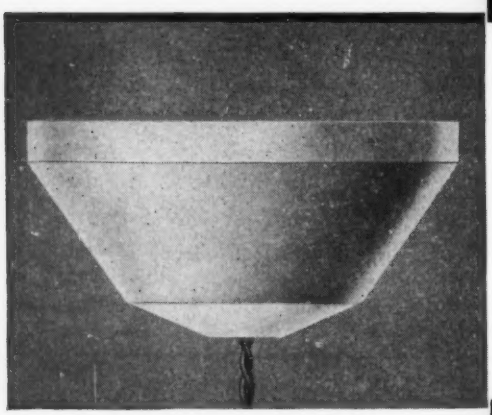
## "CORDCONE" *with pilot light*



*For all applications which require remote indication or to show a live load.*

*Pilot consists of miniature neon lamp which glows red with excellent angular visibility. Approximate life seven years.*

*Double pole 1 way only. Brown or ivory.*

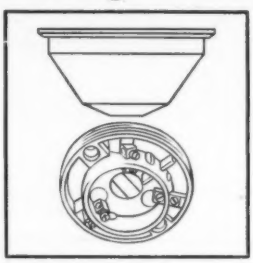


## *and* FALKS "FLEXCONE"
## *a matching ceiling rose*

**Styled to match the "Cordcone" ceiling switch, to meet the requirements of modern installations. May be used without block or pattress.**

**Available 2 or 3 plate, brown or ivory, with or without flange.**

✳ *2 in. centre fixing with or without flange.* ✳ *A flange pattern for conduit box fixing or for covering rough ceiling holes.* ✳ *Angled terminals for easy wiring.* ✳ *Very effective cord grip.* ✳ *With closed back, hence needing no pattress.* ✳ *No visible fixing screws.* ✳ *Conforms to B.S.67:1938.* ✳ *Overall cover.*



# FALKS

FALK STADELMANN & CO LTD

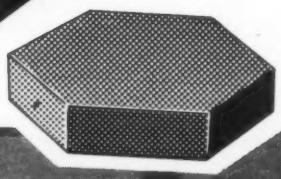
91 Farringdon Rd., London, E.C.1
*Tel.* HOL 7654

*Showrooms:* 20/22 Mount Street, London, W.1. *Tel.* MAY 5671
*and Branches.*

(CC3)

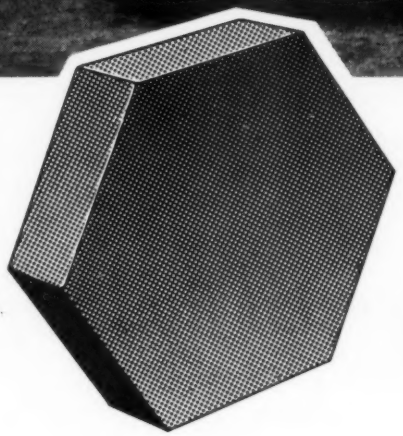
# UNUSUAL, BUT







*Photograph by—Arthur Cooper, Coventry.*



# BY HAUNCHWOOD

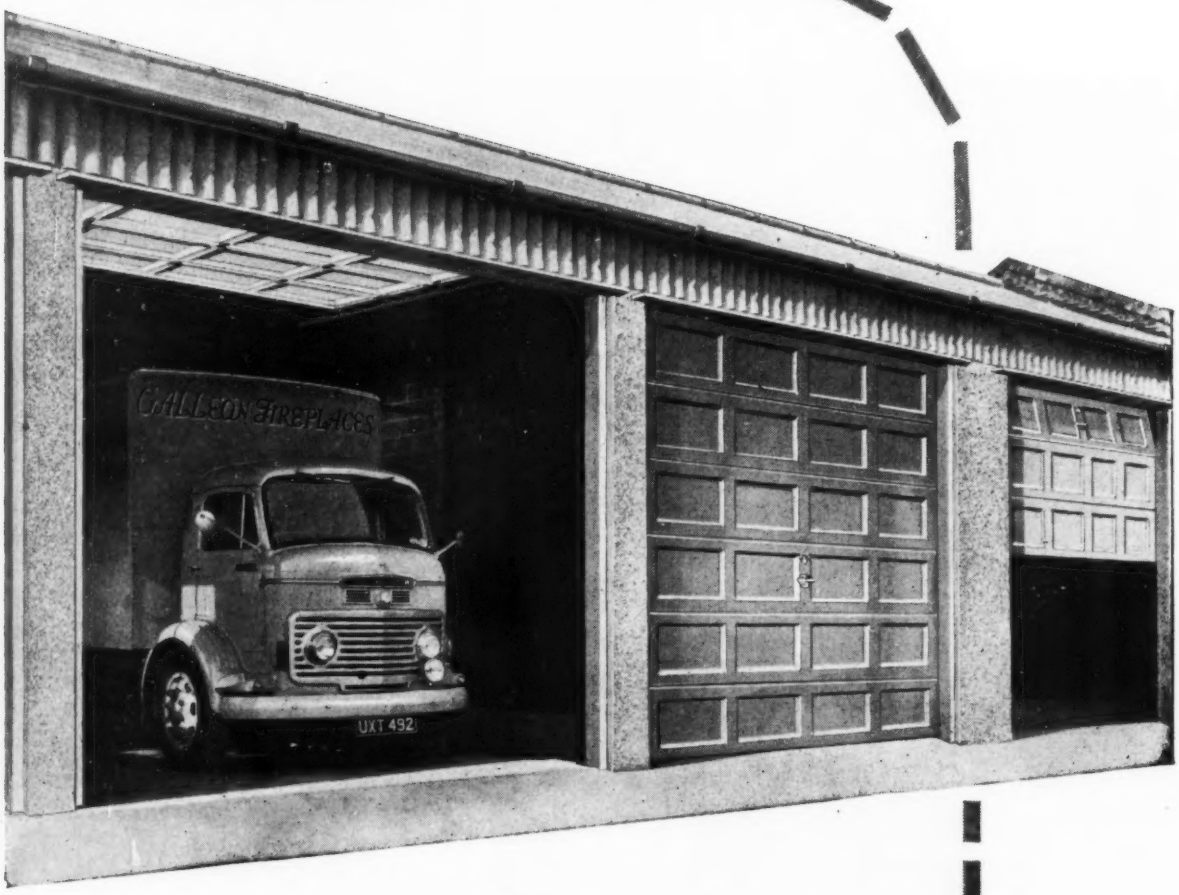
## *of course!*

*Hexagonal paving tiles of blue vitrified engineering quality—exclusively for the new Coventry Cathedral. Architect, Basil Spence, P.R.I.B.A. Unusual specification and shape so HAUNCHWOOD of course. Haunchwood manufacture bricks, chimney pots, ridges, airbricks, fireplace bricquettes, and other clay building products. Enquiries invited—standards or specials.*

**HAUNCHWOOD BRICK & TILE CO. LTD., STOCKINGFORD, NUNEATON**

*Telephone : Nuneaton 3419 : In association with G.W. Lewis' Tileries Ltd.*

# Overhead Doors




## *for Commercial Buildings*

The HILLALDAM range now includes overhead horizontal sectional doors for commercial and industrial buildings.

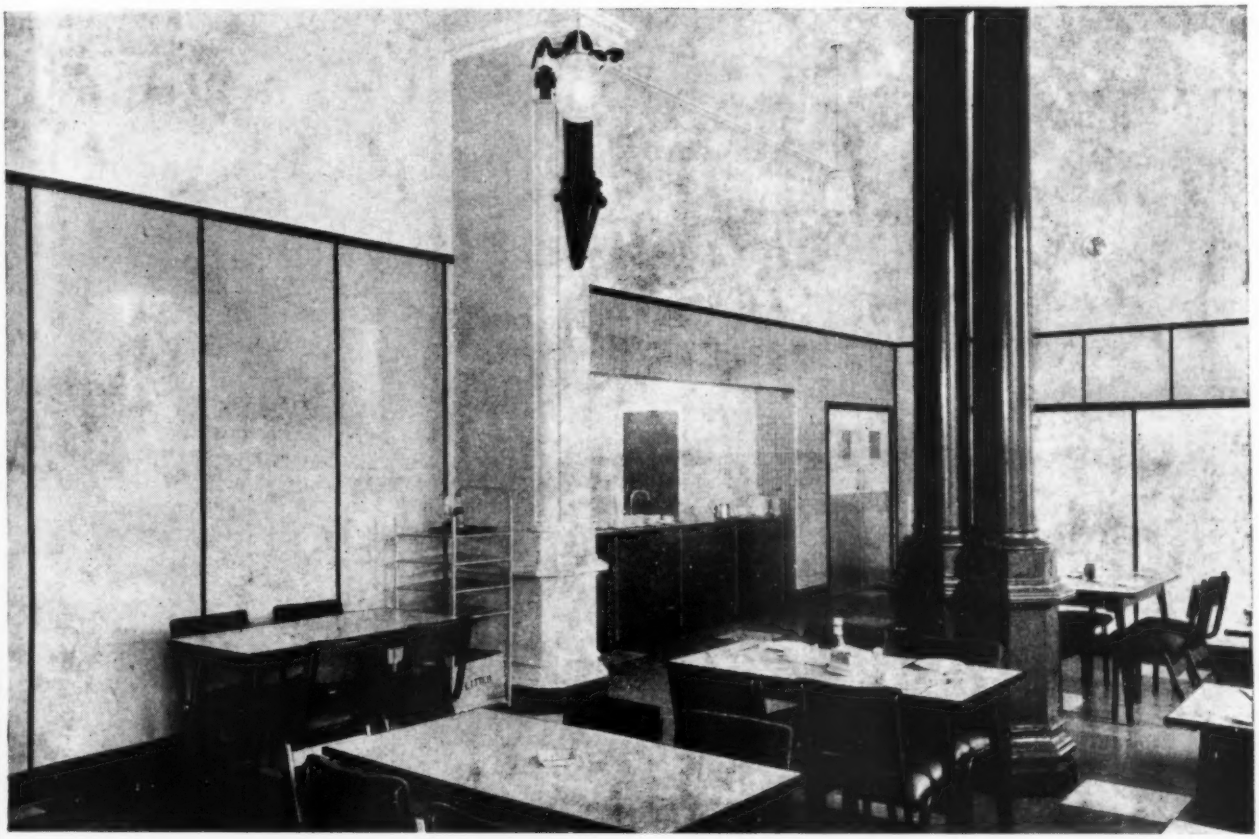
*Please ask for details.*

HILLALDAM
THE SLIDING DOOR PEOPLE

**E. HILL ALDAM & COMPANY LIMITED**
**BRITANNIC WORKS, RED LION ROAD, TOLWORTH, SURREY**
Telephone: Elmbridge 0090 (6 lines) Telegrams: "ALDAMILLO" SURBITON

**THE STAFF CANTEEN—ST. PANCRAS STATION**
Redecorated and modernised with Hornitex. Walls and partitions in grey and white Filigree, and green and grey Arabesque.

*Photograph reproduced by courtesy of The British Transport Hotels & Catering Services.*



# Hornitex Brightens British Railways

This is one of the many modernisations carried out with HORNITEX by the British Transport Hotels & Catering Services.



**HORNITEX!** The top quality, melamine surfaced hardboard which now gives architects new opportunities in interior design —and at the lowest retail prices in the country!

**WONDERFUL HORNITEX!** HORNITEX panels can be fixed or interchanged in a moment with the ingenious Klipiton jointing strip.

**SUPER HORNITEX!** Completely odourless and unaffected by steam, oil, grease, boiling water, acid and mild alkali.

**BRILLIANT HORNITEX!** Now available in 50 superb colours and patterns including black, black and gold and white and gold, in standard size sheets 8′ 4″ x 5′ 6″.

**SEND NOW** for fully detailed literature, latest samples and patterns.

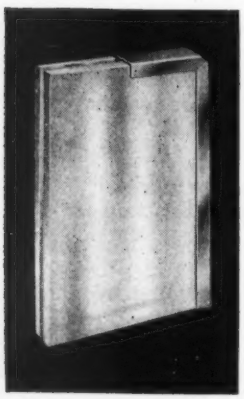
*Our technical advisory service will be happy to give any information or assistance*

**Hornitex Super**

**HORNITEX** (PLASTICS) **LTD.,** 37/38 Fenchurch Street, LONDON, E.C.3. Telephone: MANsion House 6599

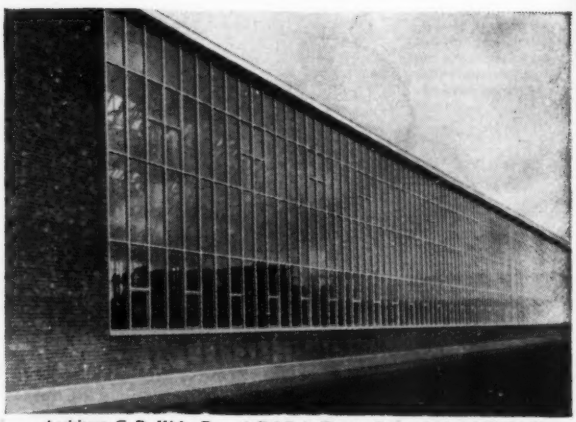
low thermal transmittance





Heat loss is no problem for the polar bear. Nor need it be so for the architect using extensive day lighting areas. 'Hilsulate' double glass panels reduce heat loss by 35%, practically eliminate condensation, lessen down-draught and can be handled as easily as single pane glass. For associative use—there are 'Hilsulate' glass faced, metal backed, coloured panels.

*For full information please contact our Technical Department.*



Architect, C. R. Kirby Esq., A.R.I.B.A. Dowty Group Ltd., of Cheltenham.

**HILLS** (WEST BROMWICH) **LIMITED**

ALBION ROAD, WEST BROMWICH, STAFFS.
Telephone: West Bromwich 1811 (15 lines).

London: CHAPONE PLACE, DEAN STREET, W.1.
Telephone: GERrard 0526/9.

*Branches at: Manchester, Bristol, Newcastle-on-Tyne, Glasgow.*

P7




*The safety treads on B.O.A.C. passenger stairs throughout the world are made from 'Corvic'.*

## When B.O.A.C. use p.v.c. for safety

# they use 'Corvic'

'CORVIC' P.V.C. POLYMERS are backed by the finest research and technical service in the country. I.C.I. put that service at the disposal of all users and potential users of p.v.c. If you would like to know more about the applications of 'Corvic' in industry, have a word with I.C.I.

Altro aluminium nosings backed up with Altro safety treads made from 'Corvic' are used on B.O.A.C. passenger stairs throughout the world. The Altro safety treads were made from 'Corvic' by Welwyn Plastics (1955) Ltd. for The Adamite Co. Ltd.

**'CORVIC'**

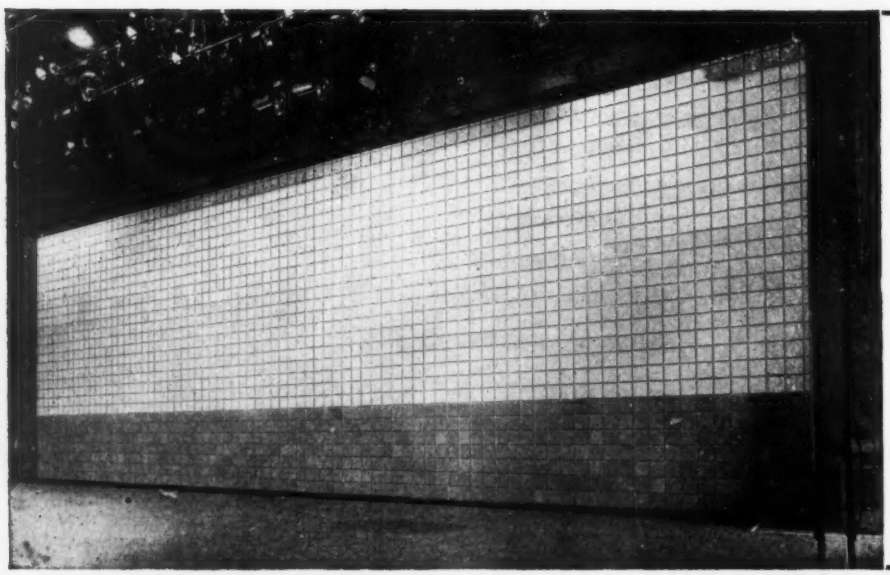
*'Corvic' is the registered trade mark for the p.v.c. polymers manufactured by I.C.I.*

IMPERIAL CHEMICAL INDUSTRIES LIMITED · LONDON · S.W.1

ICI

# ACOUSTIC SEPARATION in excess of 68 d.b. at STUDIO 5

*A tall order? ... not for KINGS*



These partitions at Associated Rediffusion's Studio 5 were designed and manufactured by GEO. W. KING LTD.

Dividing Associated-Rediffusion's large main Studio (140′ x 100′) at Wembley into two self-contained, acoustically isolated units, by 88′ x 30′ partitions which can be raised or lowered at will, is the result of KING'S research and unashamedly brilliant engineering.

Solving such problems is nothing unusual at KING'S, where a man's size headache is a badge of office.

If yours is a door problem, acoustic or otherwise — come and talk it over: or we'll be pleased to call on you anywhere in the world.

KING

GEO. W. KING LTD.
ARGYLE WORKS, STEVENAGE, HERTS.

ACOUSTIC LIFTING OR SLIDING PARTITIONS AND DOORS · SLIDING DOORS AND GEAR
STUDIO LIGHTING HOISTS · ALL TYPES OF MATERIALS HANDLING EQUIPMENT




*Drawing by Susan Blackwell*

A Palladio Magnus wallpaper PANNUS, designed by Humphrey Spender, has been chosen as one of the Design Centre Awards for 1960

WPM

MORTIMER STREET

# A place for Wallpaper

THE FOLLOWING COLLECTIONS
ARE AVAILABLE FOR ARCHITECTS CONCERNED
WITH THE SPECIFICATION OR DIRECTION
OF DECORATIVE SCHEMES

**PALLADIO, HAYWARD, THE ARCHITECTS BOOK**

AND MAY BE SEEN AT

The Architects' Department The Wall Paper Manufacturers Limited
19/21 Mortimer Street London W 1
or King's House King Street West Manchester 3



# WALPAMUR PAINTS

## do a wonderful job

Beautiful colours . . . lasting perfection of finish . . . for inside and outside use . . . Walpamur Quality Paints do a wonderful job. Constant laboratory testing at every stage of manufacture ensures the consistently high quality on which is based the international reputation of these famous paints.

**DURADIO 5-YEAR ENAMEL PAINT** is unsurpassed for interior and exterior decoration.

**WALPAMUR WATER PAINT** is ideal for walls and ceilings: a special Exterior Quality is also available.

**WALPAMUR EMULSION PAINT** is quick-drying with long-lasting results and washes like new.

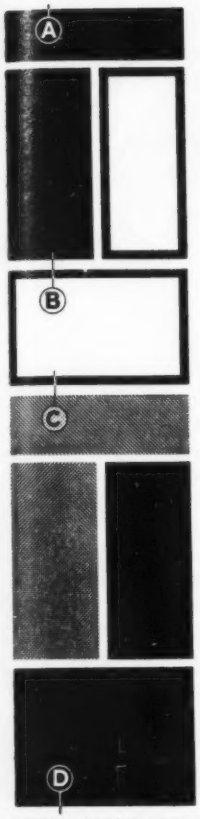



*For further details of these and other Walpamur products write to The Walpamur Co Ltd., Darwen, Lancs.*

**THE WALPAMUR CO LTD · DARWEN & LONDON**

**Paints Enamels and Varnishes for every possible need**

W916

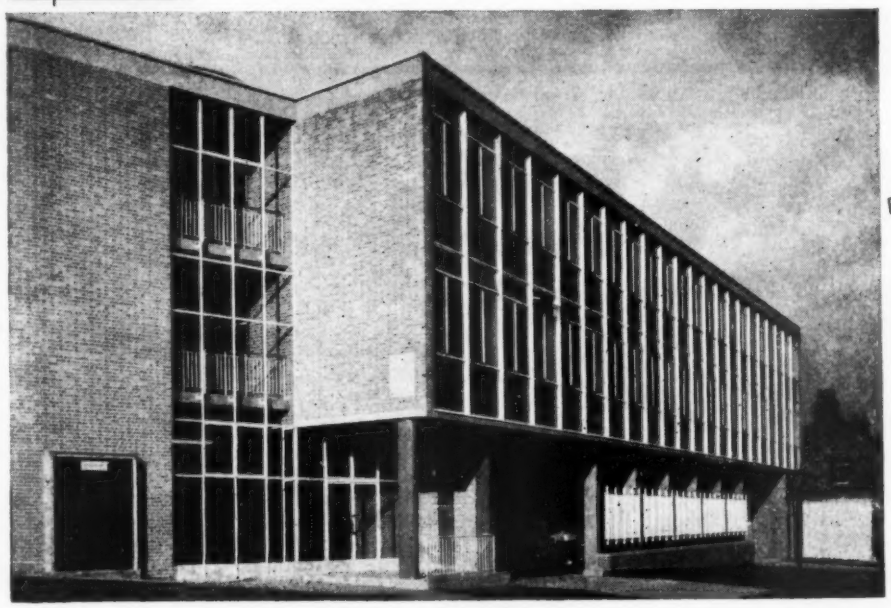



# BEACON WALLCLAD

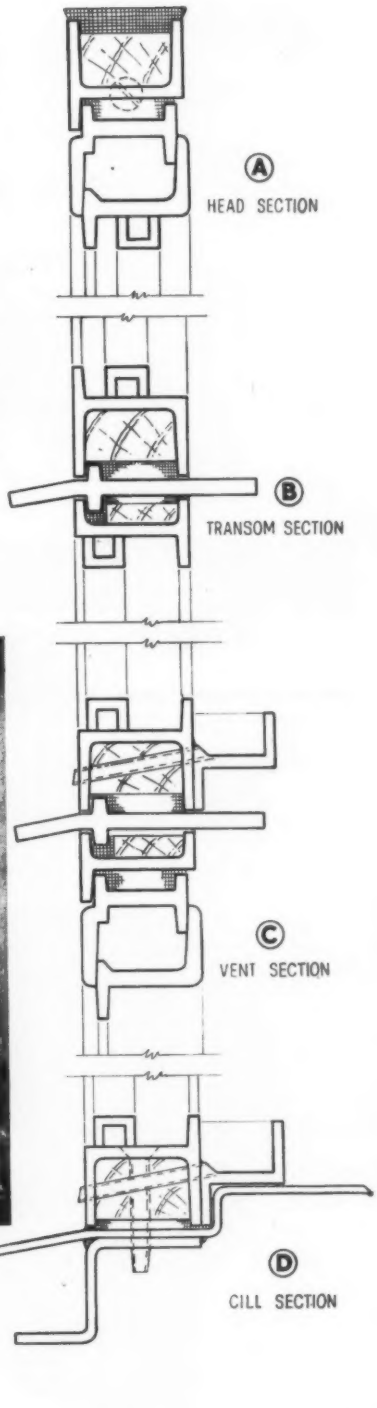
*Simple yet versatile*, this form of curtain walling, extreme in application, easy to assemble, fulfils the rigorous conditions of exterior weatherproofing. WALLCLAD is flexible, strong and straightforward, and can be applied to any sound structure.

The main support is a cruciform section, rolled steel bar, the rigidity of which controls the uniform expansion of the structure and minimises distortion. The availability of many infill panels, which can be incorporated in a WALLCLAD scheme, allows extensive scope for first class presentation in building technique.

WE HAVE A COMPREHENSIVE CATALOGUE ON WALL-CLAD — WHY NOT SEND FOR ONE?



*Wolverhampton Postmen's Office, P.D.O. and Garage, Horseley Fields, Wolverhampton. Contractor: A.F.R. Godfrey & Co. Ltd.*




BEACON WALL CLADDING SYSTEM

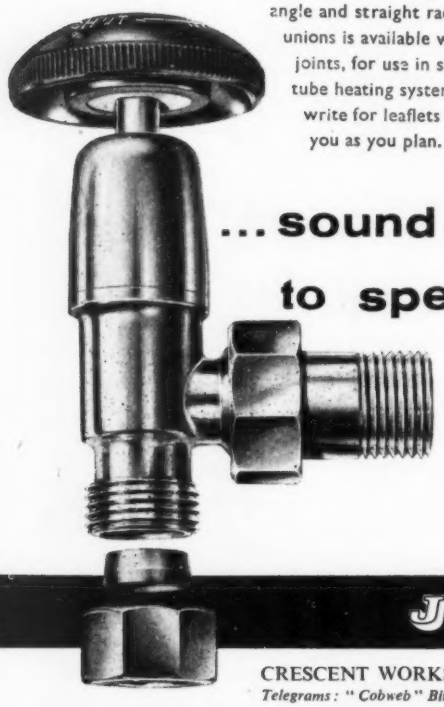
JOHN THOMPSON BEACON WINDOWS LIMITED, WOLVERHAMPTON.

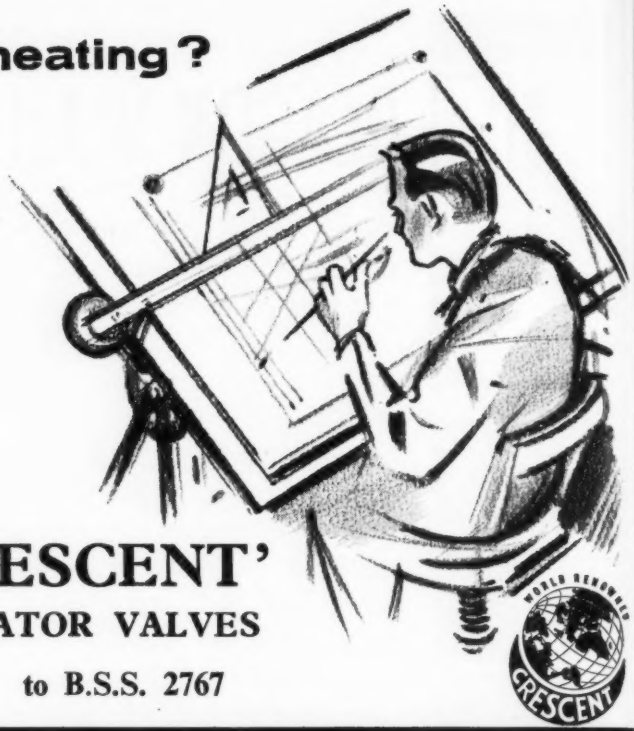


W916

## planning small bore heating?

The "Crescent" range of ¼in. and ⅜in. angle and straight radiator valves and unions is available with compression joints, for use in small bore copper tube heating systems. Please write for leaflets to keep by you as you plan.





... sound plan to specify

'CRESCENT'
RADIATOR VALVES
to B.S.S. 2767

WORLD RENOWNED CRESCENT

JOHN WEBB & CO. LTD.

CRESCENT WORKS, HOCKLEY, BIRMINGHAM, 19
*Telegrams: "Cobweb" Birmingham Telephone: Northern 3904 (5 lines)*
*Telex No.: 33-468 Starline, Birmingham*

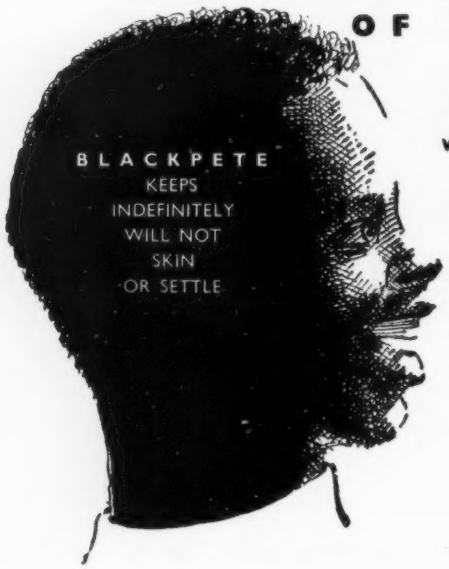
LONDON DEPOT & WAREHOUSE:
13 Gt. Guildford Street, London, S.E.1
Tel.: WATerloo 7470
BRANCH WORKS: Monusk Works, Brynmawr, Brecs.

# BLACKPETE

A BITUMINOUS PAINT OF QUALITY

GIVING 1st CLASS PROTECTION at a sensible price

DRIES HARD IN 3 TO 4 HOURS WITH A BRILLIANT LUSTRE






TO:
STRUCTURAL
IRON & STEELWORK
RAINWATER TANKS
DOWNSPOUTS
GUTTERS
SHEDS
ROOFING FELT
GATES & FENCES
DUTCH BARNS
WAGONS, ETC.

1 GALL. TIN 10/- per gall.
5 OR 10 GALL. DRUM 8/- per gall.
40 GALL. DRUM 7/- per gall.

WAREING BROTHERS & CO LTD

CARLTON ST., WORKS
BOLTON, LANCASHIRE
Tel. No.: BOLton 1566–1567 & 227

C.W.4891

# I'm your automatic front door receptionist

**SAYS STERDY PORTER**




" I don't want to brag but you won't find my equal anywhere. In flats, offices and converted houses I can deal diplomatically with front door callers 24 hours a day. At the push of a button I put each one through to the appropriate occupant's telephone, admit them only when so desired and relock the door as they close it. That means no tiring journeys up and down stairs for residents, no ' gate crashers ' and no need for a Hall Porter. Small wonder I'm so popular with Architects and Builders everywhere."



***" I'm available for outright purchase or on excellent rental terms—so write or phone today for full details."***

## STERDY TELEPHONES LIMITED

*(Incorporating W. C. Davey & Co.)* Queens House, 180-182, Tottenham Court Road, London, W.1. Telephone: MUSeum 4414, 4415 and 6388

---

# "SHEBA" COMPLETE BUILDINGS

## THE STANDARD BUILDING TO MEET YOUR EXACT REQUIREMENTS

SHEBA complete buildings can be supplied and erected anywhere in the United Kingdom. Foundations and builders work may be executed by your Contractor or, alternatively, we will undertake full responsibility.
Advantages of Sheba Buildings which incorporate solid joist "Burton-Span" Portal Frames, are any height to eaves and any span from 20ft. to 120ft. Single Valley Stanchions. Suitable for crane gantreys.

**YOUR SPACE IS VALUABLE- WE MAKE THE MOST OF IT.**



Shepley Booth & Associates Ltd.

Head Office: GRANVILLE HOUSE, 2 TETTENHALL RD., WOVERHAMPTON
Telephone: WOLVERHAMPTON 27246
Cables: SHEBA, WOLVERHAMPTON.



# There's a Janitor boiler to suit any requirement

For constant hot water and reliable central heating at the lowest cost, you can confidently recommend a Janitor Solid Fuel or Oil-Fired Boiler. The design, workmanship and operating efficiency of Janitor Boilers appeal to the most discriminating buyers, and all models are available in Light Cream, Summer Blue, Poppy Red and White, to suit particular decorative schemes. Attractive hire purchase terms, including all installation charges, can be arranged.

| OIL-FIRED | | SOLID FUEL | |
|---|---|---|---|
| JUNIOR | 60,000 B.t.u/h | JUNIOR | 40,000 B.t.u/h |
| O.1. | 90,000 B.t.u/h | A.1. | 50,000 B.t.u/h |
| O.2. | 125,000 B.t.u/h | A.2. | 80,000 B.t.u/h |
| O.4. | 200,000 B.t.u/h | A.2x. | 110,000 B.t.u/h |
| | | A.3. | 140,000 B.t.u/h |

JANITOR BOILERS LTD · CAMBERLEY · SURREY

*London Showrooms: 19 Berkeley Street, London, W.1.*

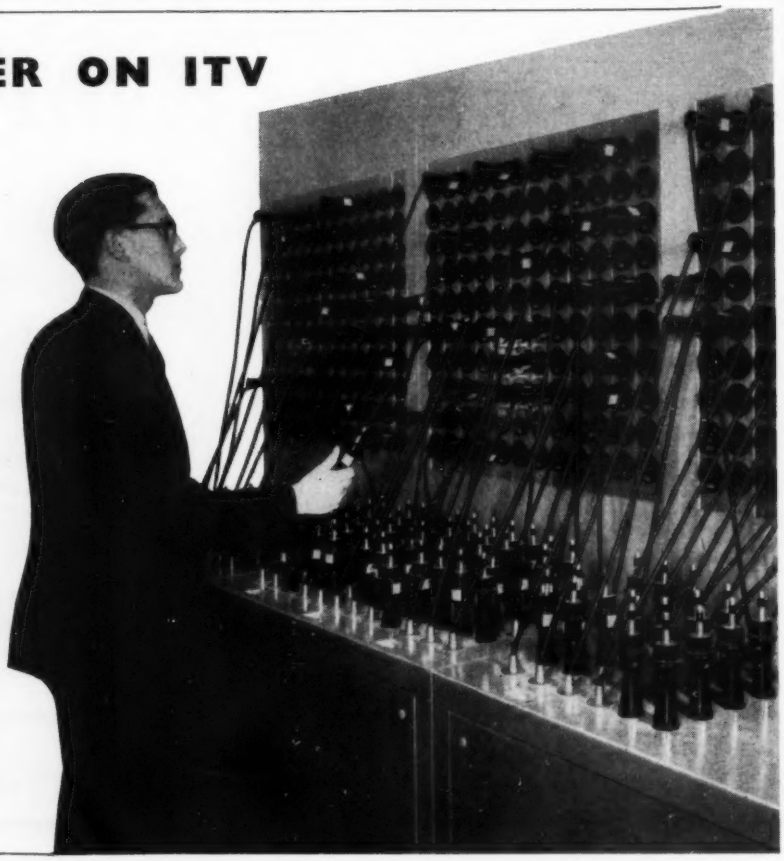
MEMBER OF THE POWELL DUFFRYN GROUP OF COMPANIES

# GOOD NUMBER ON ITV

This patch panel resembling a giant telephone board is part of the Production Lighting installation at Association Rediffusion's new Wembley V Studios.

Besides manufacturing the remote lighting controls and switchgear in this important technical building the whole vast and complex wiring system was entrusted to Strand Electric Contracts Department and included extensive wiring for offices and canteen together with all the electronic and electrical services.

For wiring contracts a good number to remember is Temple Bar 4444.



STRAND ELECTRIC

**Strand Electric & Engineering Co. Ltd.,**
**29 King St., Covent Garden, W.C.2**
*Temple Bar* 4444.

IN EVERY SPECIALISED FIELD

ONE LEADER STANDS OUT!

...IN CHAIN LINK FENCING-ITS...

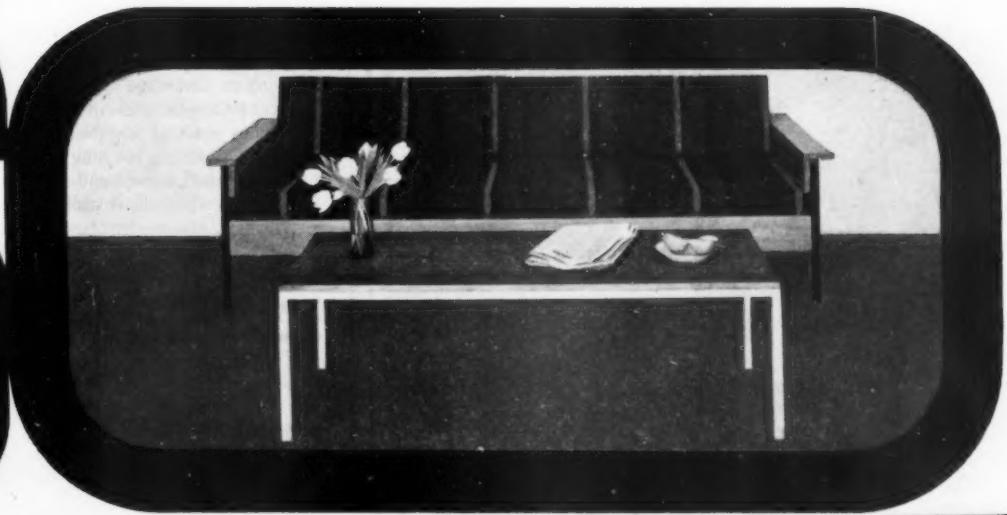
FLEXTELLA

*Ask the Big Suppliers and Users!*

J. B. CORRIE (FLEXTELLA) LTD · PETERSFIELD · HANTS · Tel: PETERSFIELD 1255/9

UC60

Converts from settee to bed in seconds. Upholstered in foam on rubber webbing the UC60 is built on a rigid square steel tube frame. Arms and front rail trim are in polished African Walnut. For sleeping the back flips over, leaving a clear area 6′ 2″ x 2′ 6″; for seating it locks positively into place. Leaflets, prices and details of covering materials from:



CONRAN FURNITURE 6 Cadogan Lane, London, SW1

Belgravia 3161 and 3024

C

When it's a Question of HARDWOODS call in GLIKSTEN

*The foremost name in Timber*

**J. GLIKSTEN**

**& SON LTD.**

**Carpenters Road, London, E.15.**

*Telephone: AMHerst 3300.*

**87, Lord Street, Liverpool, 2.**

*Telephone: Central 7576.*

**Victoria Dock, Citadel Street, Hull.**

*Telephone: Hull 31144.*

*Our stocks include*

**AFRORMOSIA**
**GUAREA**
**IDIGBO**
**IROKO**
**MAKORE**
**MAHOGANY**
British Honduras & African
**MANSONIA**
**OAK**
**SAPELE**
**TEAK**
**UTILE**
**WALNUT**
African
**WALNUT**
American Black

Can be kiln-dried to any desired moisture-content.

*

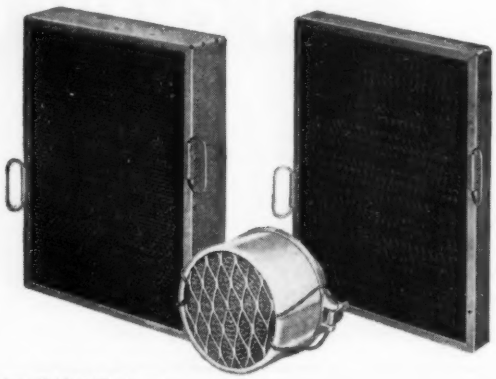
Gliksten

*The foremost name in Timber*

When it's a Question of HARDWOODS call in GLIKSTEN

## Air filtration costs cut by up to 75%

Over-all efficiencies in excess of 99.5% are regularly attained with installations of FAR-AIR viscous impingement filters. Every detail of design for simple and speedy cleaning and replacement has been carefully worked out to save time and expense. These are the reasons why users of FAR-AIR equipment regularly report annual savings of more than 75% of their previous expenditure on air and gas cleaning.



**LEFT**
4" thickness FAR-AIR viscous impingement filter panel

**CENTRE**
Circular FAR-AIR intake filter for reciprocating engines

**RIGHT**
2" thickness FAR-AIR viscous impingement filter panel

*These filters are available rom stock in a wide variety of standard dimensions*

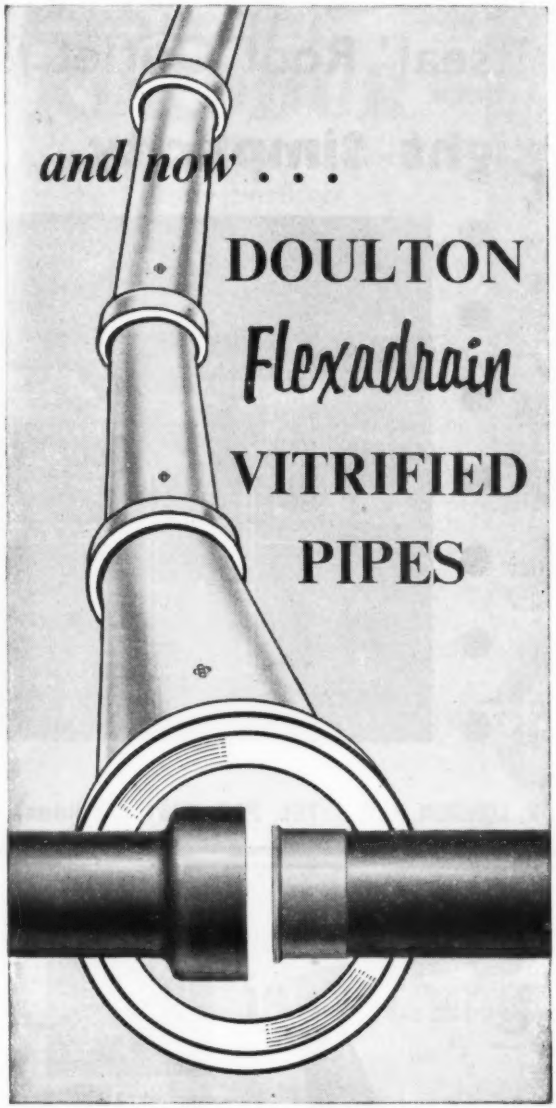
'Do-it-yourself' or 'Laundry' maintenance?

FAR-AIR filters may be cleaned with a hosepipe and re-oiled by spraying or advantage may be taken of the FAR-AIR 'Laundry' Service. FAR-AIR filters maintenance centres are being established in various parts of Britain, to provide facilities for the regular collection, cleansing, re-oiling and return of filter panels. FAR-AIR filter maintenance plant and equipment is also available for large installations where the cost of the equipment is justified.

## interpose an INTERMIT Far-Air filter

INTERMIT LIMITED
BRADFORD STREET
BIRMINGHAM 5
PHONE: MIDLAND 7961

MEMBER OF THE BIRFIELD GROUP



*and now . . .*

DOULTON
*Flexadrain*
VITRIFIED
PIPES

This new method of speedy jointing now adds the great advantage of *FLEXIBILITY* to the strength and durability, the resistance to corrosion and all the other time-tested properties invariably associated with Doulton Vitrified Pipes.

A specially designed rubber sleeve (rubber to British Standard Specification No. 2494) on the spigot forms a compact ring when pressed home into the socket, giving a pressure joint with perfect seal. Deflections of plus or minus 2½ degrees and a 'draw' or linear displacement of ½″ per joint are easily accommodated. Drains can be laid under any conditions, tested and backfilled without delay. High efficiency is combined with low costs.

*Write for further particulars to:—*

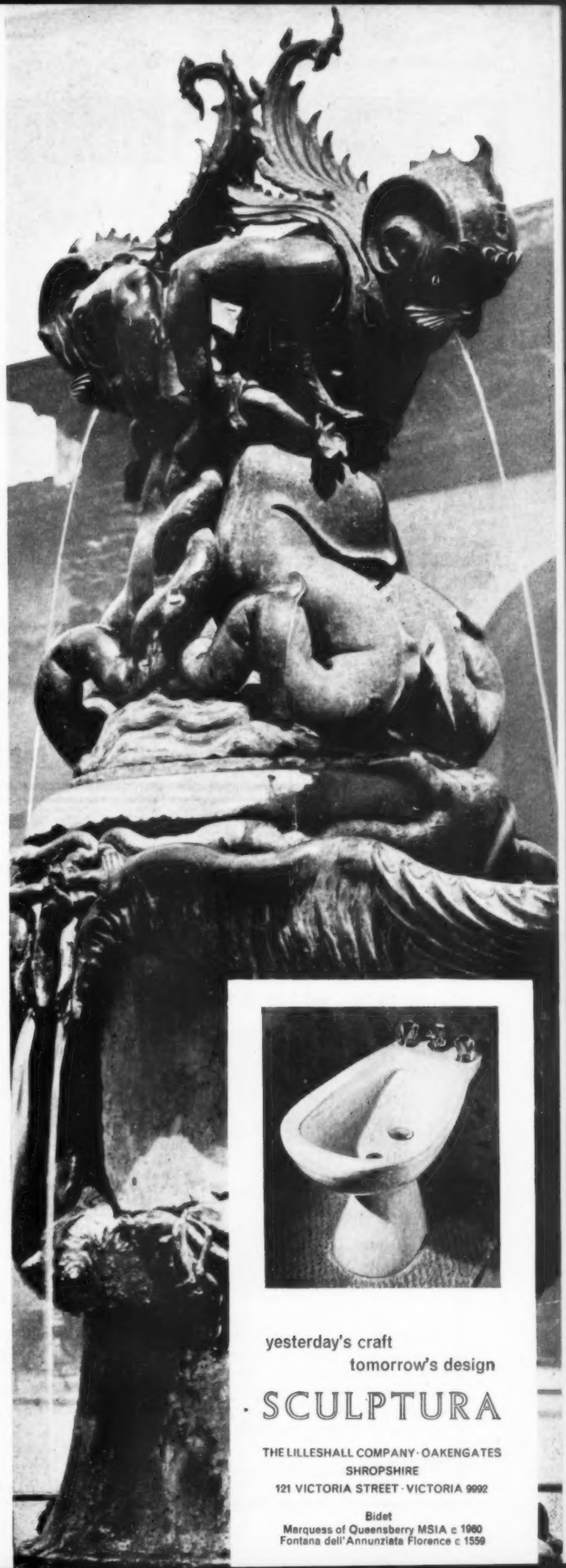
**DOULTON VITRIFIED PIPES LIMITED**

**Dept. BE, Doulton House, Albert Embankment, London, S.E.1**

B5300









yesterday's craft
tomorrow's design

SCULPTURA

THE LILLESHALL COMPANY · OAKENGATES
SHROPSHIRE
121 VICTORIA STREET · VICTORIA 9992

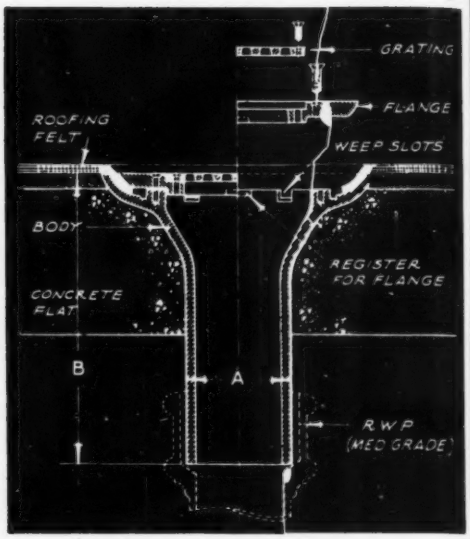
Bidet
Marquess of Queensberry MSIA c 1960
Fontana dell'Annunziata Florence c 1559



# BROADS 'Feltseal' Roof Outlet for Watertight Simplicity

Prov. Pat 29830/57

- Designed for Felt covered Flat Roofs
- Simple to fix. Grating removable without disturbing joint
- Watertight. Positive compression all round
- No restriction of flow through Outlet
- Domical Grating for use where leaves etc. are liable to gather
- Adequate depth of spigot for joint to downpipe
- Weep Slots to prevent seepage



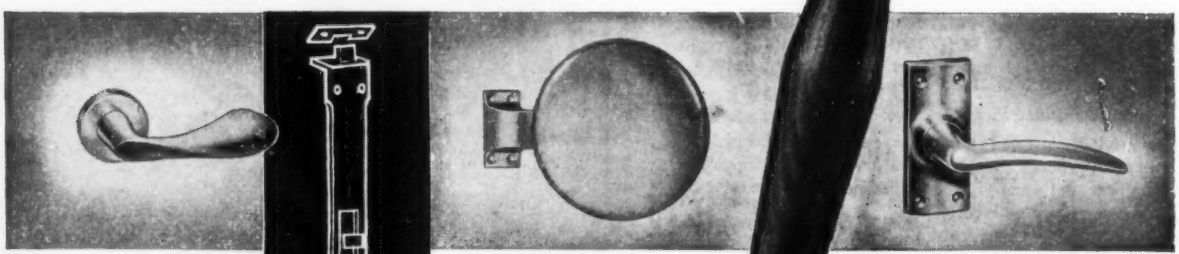

BROADS

MANUFACTURING CO. LTD., 4, SOUTH WHARF, PADDINGTON, LONDON, W.2 TEL. PAD. 7061 (20 lines)

SHOWELL

REGD. TRADE MARK

MODERN DOOR AND WINDOW FURNITURE



1177-00 3251 1891 1159-04



1847



1721

Modern architectural design demands door and window furniture that is at once distinctive, pleasing, and practical. Showell meets all requirements with a range that is craftsman-made, and in perfect harmony with any scheme of decoration. For houses, offices, public buildings, schools, and theatres, there is no finer choice than Showell. Our latest illustrated brochures will gladly be sent on request.

UNION

An extensive range of locks and brassfoundry is manufactured by our associate company, Josiah Parkes & Sons Ltd.

EDWIN SHOWELL & SONS LTD., STIRCHLEY, BIRMINGHAM, 30. TEL. KINGS NORTON 1195/6/7

# Specify KORODUR ~ and Ensure Freedom for Wear

**A few advantages of Korodur Floor Surfaces**

•

**KORODUR RESISTS WEAR FROM THE HEAVIEST TRAFFIC**

•

**RESISTANT TO IMPACT AND SHOCK**

•

**NON-RUSTING AND DUSTLESS**

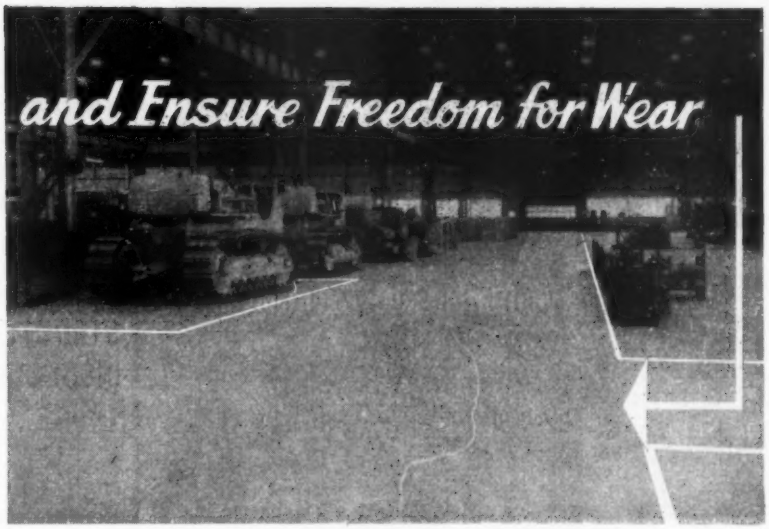
•

**IMPERVIOUS TO PETROL AND MINERAL OILS**

•

**CAN BE LAID AS TILES OR IN-SITU**

•



*To ensure freedom from wear The Caterpillar Tractor Co. Ltd. Glasgow specified KORODUR*

WRITE NOW FOR FULL INFORMATION ON KORODUR EXTRA HEAVY DUTY FLOORING

*SOLE DISTRIBUTORS FOR THE U.K.*

PRODORITE LTD

— *HEAD OFFICE* —

**EAGLE WORKS · WEDNESBURY**

*Telephone :* WED 1821 (10 lines)

— *LONDON OFFICE* —

**ARTILLERY HOUSE · ARTILLERY ROW · LONDON · S.W.1**

*Telephone :* ABBey 7601 (6 lines)

# There is nothing to equal

# LEAD

# for chimney flashings

**LEAD DEVELOPMENT ASSOCIATION**

18, ADAM STREET, LONDON, W.C.2. *Telegrams:* Leadevep, Rand, London. *Telephone:* WHItehall 4175

h

**THE LEAD SHEET & PIPE TECHNICAL INFORMATION BUREAU**

advises on the use of Lead in building work. Most of the many uses are detailed in the Association's publications, and in addition the Bureau's technical officers are always glad to give individual assistance.

S4/60

Heating Ventilating & Air conditioning

The entire installation, including the pipe work of supplies to and from the boiler, trunk work and air filters, radiators, heating panels, and all necessary plumbing, will be carried out by our own staff.

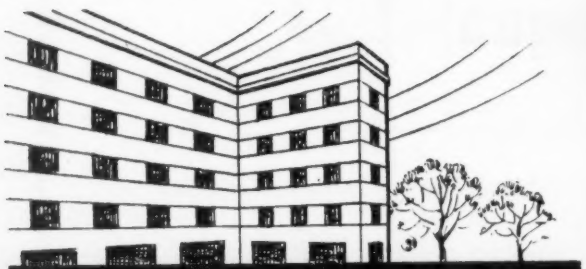
In addition our consultant service and drawing office are at your disposal.

Send for full details.

**BIRMINGHAM & BLACKBURN**
**Construction Co. Ltd.**

Armoury Close, Bordesley Green, Birmingham 9
and at George St. West, Blackburn.

**ROTARISTA**



**protective paint**

May be applied without special sealer to:

RUSTED, GALVANISED or CORRUGATED IRON, LEAD, ALUMINIUM or WHITE ALLOYS, TARRED or CREOSOTED WOOD, ROOFING FELT or CANVAS, ASBESTOS, CEMENT or CONCRETE, INTERIORS of WATER TANKS, UNDERGROUND WORK, etc.

"Rotarista" possesses exceptional durability and will prevent rust under all conditions. It is especially resistant to industrial fumes and coastal exposure.

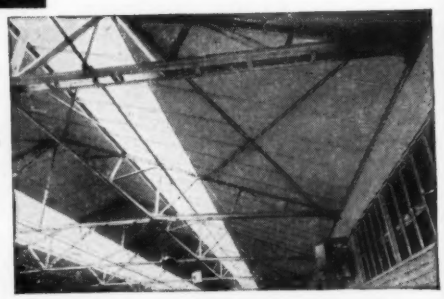
* *Special Architects' Brochure, with full details and comprehensive specifications, is available on direct application to:*

**PEACOCK & BUCHAN LTD., SOUTHAMPTON**
Telephone: Southampton 73108

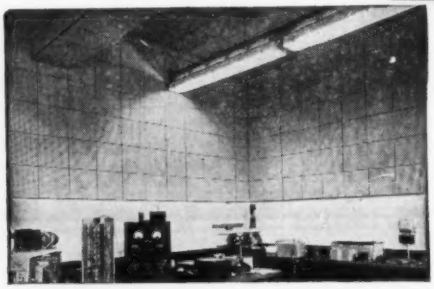
**SPECIALIST ADVISORY SERVICE BACKED BY 37 YEARS' EXPERIENCE**

**METCO METAL FIXING**

**STRUCTURAL INSULATION**



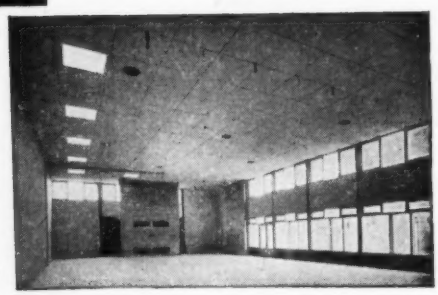
**UNITEX ACOUSTILES**



**SOUND ABATEMENT**

**'VEELAP' INSULATION**

**SUSPENDED CEILINGS**
3'4" MODULE



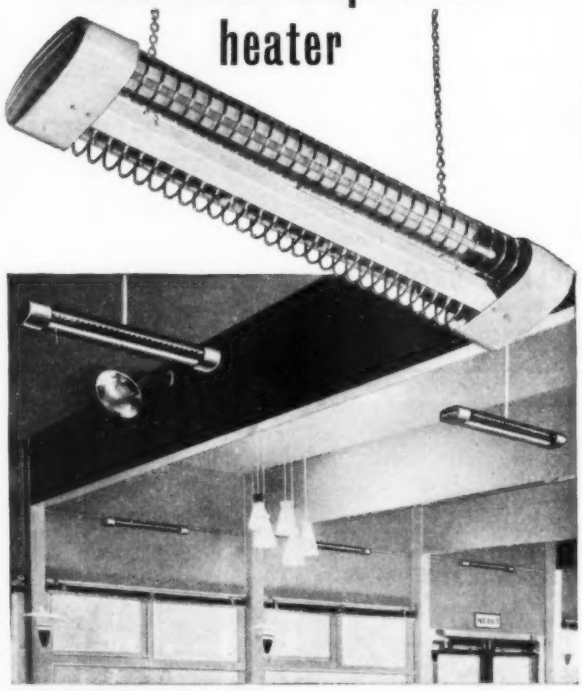
We offer you complete service 'from the drawing board to the finished job'. Your enquiries are invited on any problem relating to the above items.

The MERCHANT TRADING COMPANY Limited
EFFINGHAM HOUSE, ARUNDEL STREET, STRAND, LONDON, W.C.2
Telegrams: "Themetreco, Estrand, London." Telephone: TEMple Bar 5303 (8 lines)

# EKCO

## 'TWINSTREAK'

### two bar infra-red industrial suspension heater



(Reproduction by courtesy of Laconite Ltd.)

Ekco 'Twinstreak' is the ideal heater for factory, workshop or office. The two silica glass-sheathed infra-red elements give a cheerful glow and the chromium-plated reflectors are adjustable for angle and direct a steady glow of warmth over a wide area.
27¾" long x 2⅝" high x 6½" deep. 1½ kW **£7.0.0d.** Tax free

Also shown in this installation is the Ekco 'Firestreak'—single element version of 'Twinstreak' for wall mounting. It is also ideal for use in bathroom, kitchen or nursery. Fitted with built-in on/off pull switch. 750 watts. **£4. 14. 6d.** (including tax) Non-switch type **£4. 2. 8d.**

# EKCO Heating

*For further information and advice you are invited to consult the Ekco Technical Advisory Service:-*

**EKCO HEATING · E. K. COLE LTD · 5 VIGO STREET · LONDON W.1**

WPS 315



# 1 2 3 4 5 6

## SIX GUIDES TO THE USE OF BETONAC



## Using Betonac

Betonac metallic aggregate produces a hard, dense surface topping.
Ideally Betonac should be laid on a good concrete base whilst still 'green'.
Excellent results can be obtained on existing concrete provided the necessary preparatory work is first carried out to receive a bonding layer on which the Betonac topping is laid.
Incorporating Betonac in a granolithic floor, by mixing or trowelling, produces a surface of greater durability.
Betonac adds the durability of steel to the adaptability of concrete and is one of the most widely applicable surfacing materials in the building, civil and structural engineering fields.

**BETONAC DEFIES ABRASION**

**QWS**

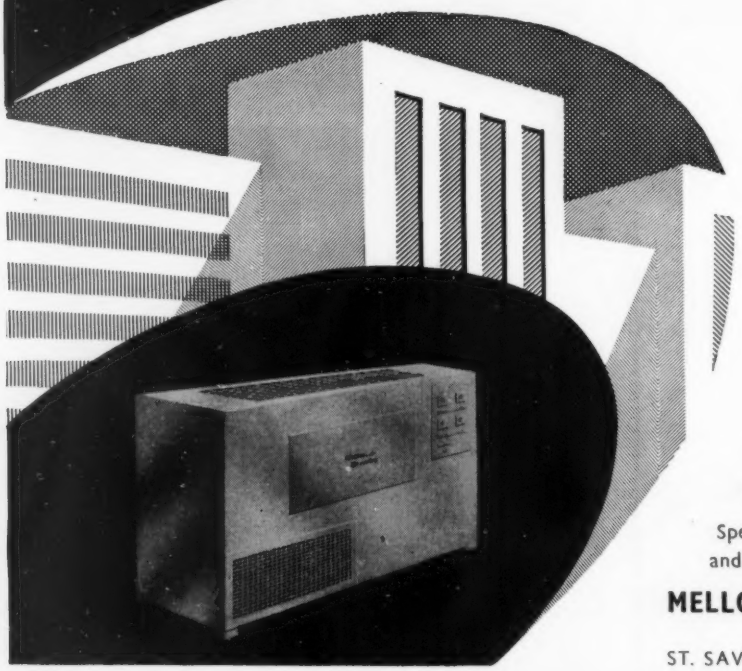
*Full particulars obtainable from*

**QUICKSET WATER SEALERS LTD**

MANUFACTURING AND SALES DIVISION
20 Albert Embankment, London, S.E.11
Telephone: Reliance 6731-2-3

A MEMBER OF THE CEMENTATION GROUP OF COMPANIES

# high velocity air conditioning



*For Modern Office Blocks, Flats and Public Buildings*

## 'Meljet'

individual *noiseless* room units giving occupants personal control of:

**• AIR FRESHNESS • HUMIDITY • TEMPERATURE • AIR CLEANING**

Special neat duct construction at lower manufacturing and installation costs.

**MELLOR BROMLEY (AIR CONDITIONING) LTD.**

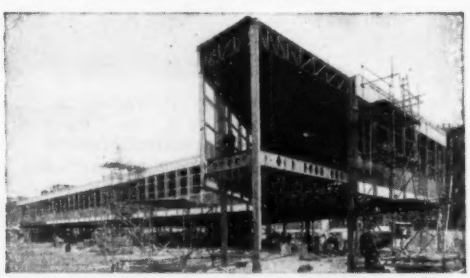
*A Member of the Bentley Group*

ST. SAVIOURS ROAD, LEICESTER, Telephone: Leicester 38161

# structural steelwork

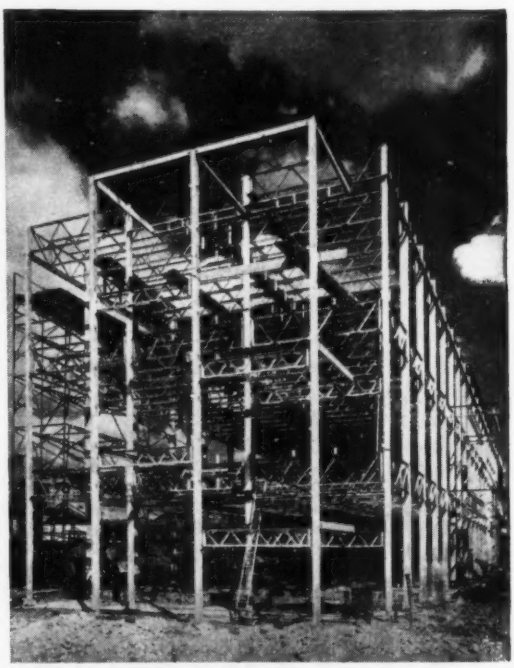
**• DESIGN • FABRICATION • ERECTION**

For this B.E.A. Building, speed was the essence of the contract. Sommerfelds designed the Steelwork and from unloading the first lorry on site to completion of a 250-ton steelwork erection, took three weeks.



New Air Terminus buildings in Kensington for B.E.A. Photograph taken 16 days after commencement of steel deliveries. Main Contractors: Messrs' Richard Costain Limited.

The Architects for the Bowater Paper Corporation Limited's new Office Blocks at both Northfleet and Mersey required Lattice Steelwork on a 3ft. 4in. module. This allowed complete flexibility of internal arrangements and all service lines are easily run between floor and ceiling.



Part of a new Office Block for The Bowater Paper Corporation Limited. *Architects:* Messrs. Farmer and Dark.

**Sommerfelds LTD. WELLINGTON · SHROPSHIRE** TEL 1000

London Office: 167 VICTORIA S' S.W.1 TEL: VIC 8843 AND 1000



# WHEN YOU'VE LOOKED AROUND

*You'll put in. . .*

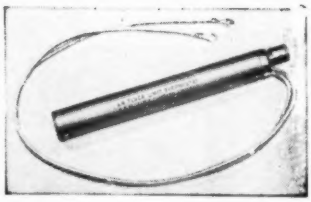
Pullin precision thermostats—a brand new range of controls for heating and cooling, specially designed by the makers of the now famous 'PULLIN PLUG-STAT' in co-operation with an internationally established designer.

*Precision*

## PULLIN THERMOSTATS

**Most Recent Addition**

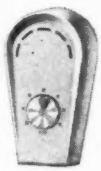
to this impressive range is the L4 Floor Limit Thermostat, specially developed as an accurate temperature limiting device for underfloor heating installations. It is specifically designed to control the surface temperature of the floor to within an accuracy of plus or minus one degree.



**Floor Limit Thermostat**

(L4)—It is cylindrically shaped so that it can be easily positioned in a conduit on a plane with underfloor heating elements. It is provided with two leads with a choice of length andaccurately controls the flow of current to the heating elements when connected in series in conjunction with the Pullin A2 Room Thermostat. The L4 is sealed against dust and moisture, and once set and installed, it requires no further attention.

Already widely acclaimed are the A2 Room Thermostats, for heating or cooling control, attractively styled in tough grey plastic finish with a temperature range of from 30° to 90° F. (or Centigrade equivalents). Available with or without an intermittent Neon Indicator Light, Control Lock or "OFF/AUTO" Switch. Rated at 0-250 volts, 20 amps A.C., non-inductive, 5 amps, A.C. at 0·7 P.F., or 0·5 amps. D.C.



**ROOM THERMOSTATS.**

Two models available, the A2/W and A2/WNL. Precision built to critical specifications and designed to control electric underfloor heating, storage heaters, tubular heaters, warm air systems, etc.

**REVERSE ACTION THERMOSTATS**

The two models A2/RA and A2/RANL have a proven record after extensive testing. Designed to meet the demand for cooling applications in industry and agriculture, they are accurate to the finest limits.



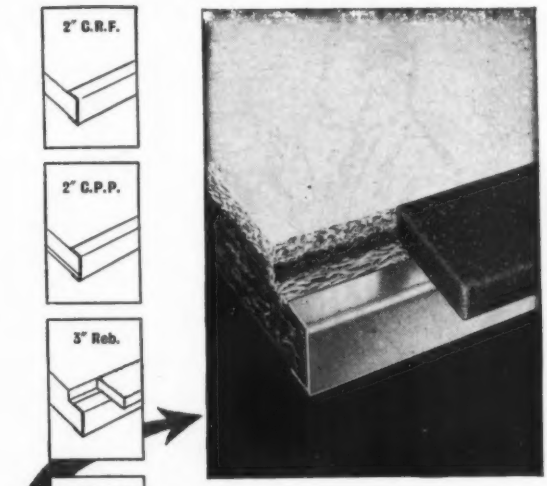
**Think of Precision Thermostats—Think of R. B. Pullin**

*Write for technical leaflets to:*

**R. B. PULLIN & COMPANY LIMITED, THERMOSTAT DIVISION, PHOENIX WORKS, GT. WEST ROAD, BRENTFORD, MIDDLESEX**

*Tel.: ISLeworth 1212* *Cables: Pullinco Wesphone London*

## *Seven symbols of progress*




**3" Reb. P.S.**

The slab identified by this symbol is our 3" Rebated Channel Reinforced Prescreeded Wood Wool Roofing Slab. It has all the advantages of our 3" Reb., including the unique Thermacoust anticondensation insulated rebate over the steel channel reinforcing strips. It is, however, pre-screeded during manufacture with a hemi hydrate gypsum plaster. Thermal movement is accommodated without trouble because the slabs can move independently in a way that is not possible where continuous screeding is applied after installation. Dry construction becomes possible with the obvious additions of speed, immediate weather protection, and the elimination of construction moisture content: it opens the way for entirely new roofing techniques.

Like all Thermacoust roofing slabs, 3" Reb. P.S. has high resistance to fire and good thermal insulation, rated at 0.19 B.T.U. with felt applied.

The sound absorption factor at 500 c/s is 0.85.

**Please write for full particulars.**

## THERMACOUST LTD

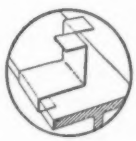
## ROOFING SLABS

**20 ALBERT EMBANKMENT LONDON SE11**

***Telephone Enquiries (Southern)*—London: RELiance 7281**

***Telephone Enquiries (Northern)*—Doncaster 54138 Ex. 25**

*When supported on inverted "T" or Thermacoust purlins no special fixing arrangements are required.*
*Flat-top purlins or R.S.J.'s call for Type 1 site fixing clips.*
*Slabs may also be provided with any of the exclusive range of Thermacoust Pre-Clips for fixing copper, SNAPRIB aluminium, slates, tiles or false ceilings.*



A member of the Cementatoin Group of Companies



**whom shall we ask to tender?**

**FOR A SATISFACTORY JOB**

**remember**

**BUILDING & ELECTRICAL CONTRACTORS IN KENSINGTON SINCE 1887**

**RAWLINGS BROS**
LIMITED

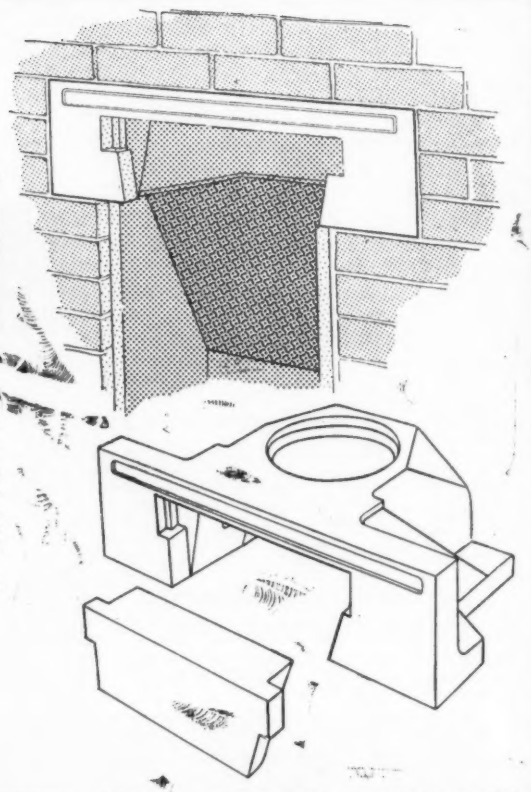
85 GLOUCESTER RD., LONDON, S.W.7

*Telephone FREmantle 8161 (10 lines)*

Ensure perfect flue operation...

with the

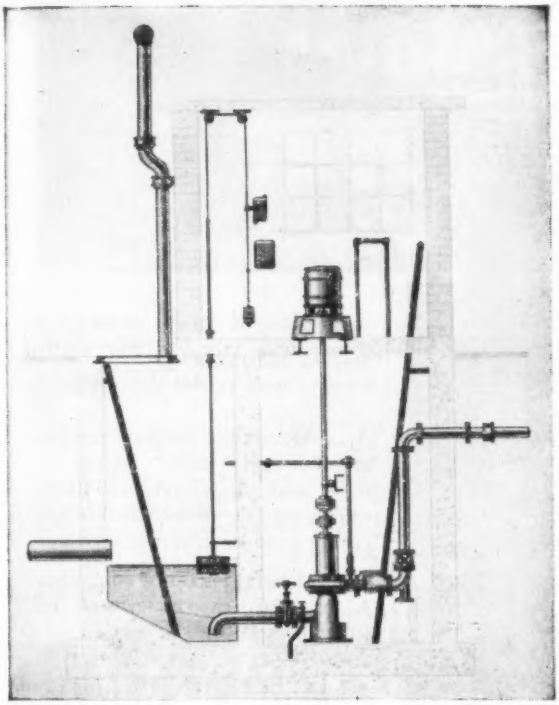
*TRUE FLUE* **Triple Unit**



This refractory concrete membrane attachment obviates the difficulty experienced in the past in adequately throating the "gather-over" above a back boiler appliance owing to provision having to be made for the back flue. The True Flue Triple Unit Type "U" has been designed so that the Membrane Unit can be bedded in the correct position spanning the flue opening, providing adequate space for the back flue and correctly throating the fire. The cost of a rough lintol, if used, together with expensive labour involved in building up the gather-over more than offsets the cost of a Triple Unit, which is simply placed in position and the job is done.
Triple units with Back Attachments where required, are suitable for all open fire appliances with or without back boilers, and for free-standing stoves.

**TRUE FLUE**
LIMITED

CONVECTOR HOUSE, ACACIA ROAD, ST. JOHN'S WOOD, LONDON, N.W.8. , TELEPHONE: PRIMROSE 7161/2/3



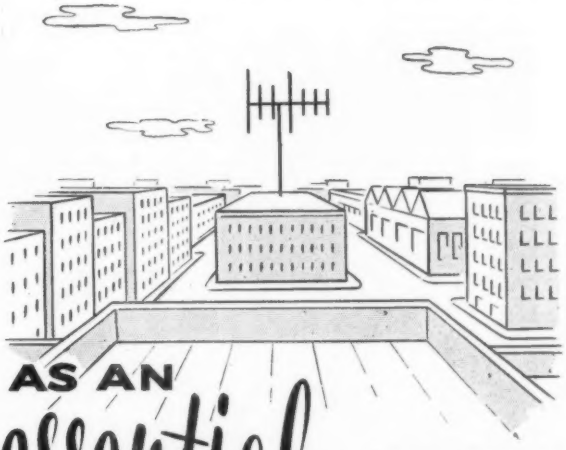
## Pumping plant *for* sewage *or* trade effluents

Long experience with pumping equipment for sewage or trade effluents of all kinds enables us to DESIGN, SUPPLY and INSTALL such plants to meet *any* specific requirements. These give many years of TROUBLE-FREE SERVICE.

**BURN BROS (London) Ltd.**

*Drainage and Sanitary Engineers*
*Manufacturers of Drain Testing Appliances*
**CRAY AVENUE, ST. MARY CRAY, ORPINGTON, KENT**
*Telephone: Orpington 31311*
Also at Weirside Works, Lower Bristol Road, Bath. Telephone: Bath 78681

## PLAN FOR T.V. AND RADIO



## AS AN *essential* AMENITY

*The need for a planned system to provide an efficient and reliable service to large numbers of receivers is essential in the modern planning of flats and similar properties.*
*Proven—and accepted by many Municipal and other authorities all over the country, the Antiference System provides ideal reception to every user—from ONE aerial —with no restriction on the type of receiver.*
*A nation-wide service is offered by this organisation—backed by our technical planning departments—with trained personnel to ensure trouble-free systems, installed at economic cost, needing an absolute minimum of maintenance and attention.*
*Our installations comply in every respect with Electricity Authority Regulations.*
*Send today for full details to:*

**ANTIFERENCE INSTALLATIONS LIMITED**

**19 DUNRAVEN STREET, PARK LANE, LONDON, W.1**
*TELEPHONE: GROSVENOR 1061/2*

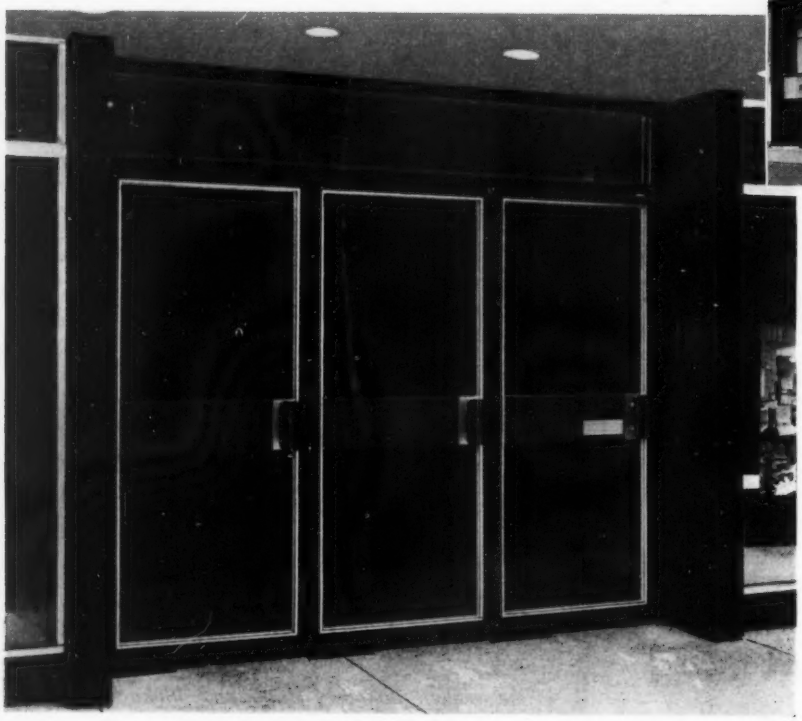
**MIDLANDS:** 39 HOLLAND STREET, SUTTON COLDFIELD 'Phone: 5354
**NORTH:** 81 MEDLOCK STREET, LIVERPOOL, 4 'Phone: Bootle 1737

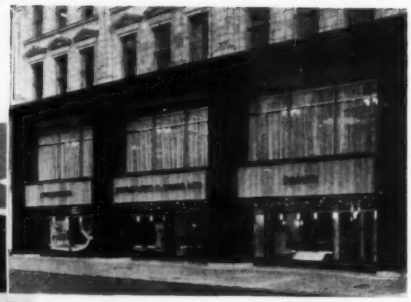
*A Member of the Antiference Group of Companies*

**LONDON · BRUSSELS · TORONTO · SYDNEY**

DHB 8236

*New Showroom in Tottenham Court Rd., W.1.*
*For John Line & Sons Ltd.*





*J. E. Dalling & Partners L/A.R.I.B.A. Chartered Architects.*
*Higgs & Hill Limited Main Contractors*

Ajax Aluminium display window sections and 'Jaxita' facings in silver and black anodised finish were used extensively in this imposing modern frontage.

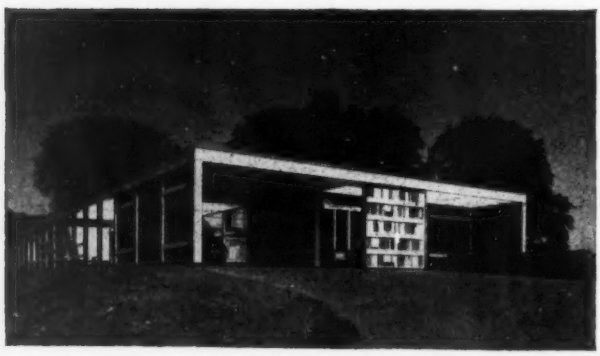
The colourful entrance comprises Ajax Aluminium doors in enamelled finish.

**AJAX ALUMINIUM LTD.**
**Ajax House**
**Kangley Bridge Rd.**
**Sydenham, S.E.26**

*third edition just published*

# 50 Modern Bungalows

*edited by* FELIX WALTER F.R.I.B.A.



*House at High Sunderland by Peter Womersley: one of the new houses illustrated*

ILLUSTRATES and describes fully a selection of examples of the most successful and interesting recently-built single-storey houses, showing the latest developments in small house planning and design. In his introduction and descriptive notes, the editor, a practising architect with considerable experience of small house design, pays special attention to new heating methods and to the latest ideas in planning, kitchen arrangements and so on which these facilitate. This edition has been thoroughly revised and brought up to date, and 15 new houses added. Costs are stated.

*Size 10 by 7½ ins., 112 pages, over 200 illustrations in halftone and line. Price still 18s. 6d. net, postage 7d.*

THE ARCHITECTURAL PRESS 9 QUEEN ANNE'S GATE S.W.1

PYROK
Regd Trade Mark

*for* **FIRE PROTECTION**
**SOUND ABSORPTION**
**THERMAL INSULATION**
**EXTERNAL PROTECTION**
**COLOUR DCCORATION and**
**ANTI-CONDENSATION TREATMENTS**

***Pyrok has been used successfully in***

**SWIMMING BATHS**
**BREWERIES**
**KITCHENS**
**DAIRIES**
**SCHOOLS**
**FACTORIES etc.**

*For further details of this treatment and of the properties of Pyrok apply to :—*

# PYROK LIMITED

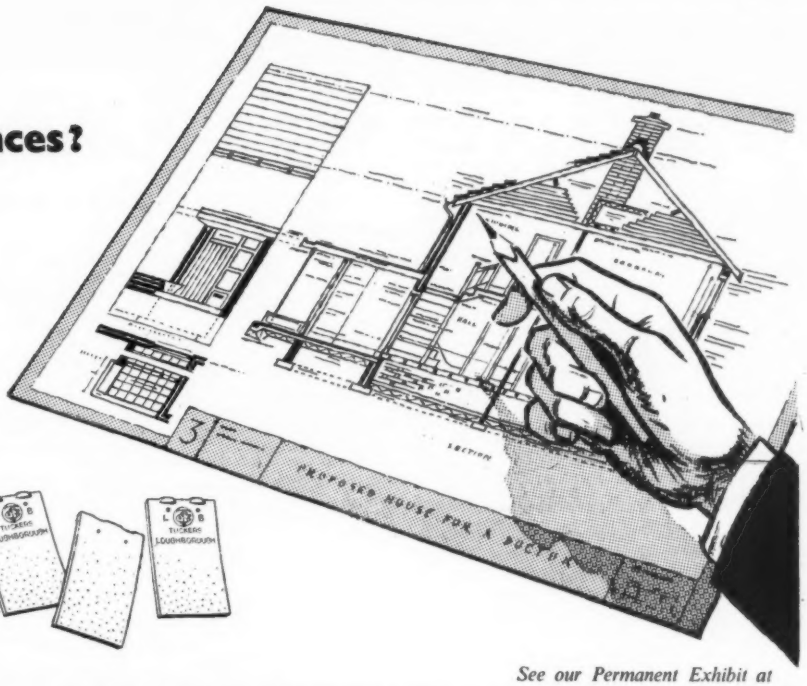
**401-404 Montrose Avenue, Slough**
**Tel.: Slough 24061**

**2-5 Old Bond Street, W.1**
**Tel.: HYD 1491**

## Client concerned about appearances?

Clients usually are, so when it comes to the roof, give them tiles of real character—tiles that will keep their good looks through many hard winters—tiles they can be proud of—Tuckers tiles.

*Colours available include Red, Mottled Purple, Dun, Thatch and Rustic Brown. Black and other special colours made to order.*




Our free illustrated brochure will gladly be sent on request, and also details of ornamental tiles for cladding vertical surfaces.

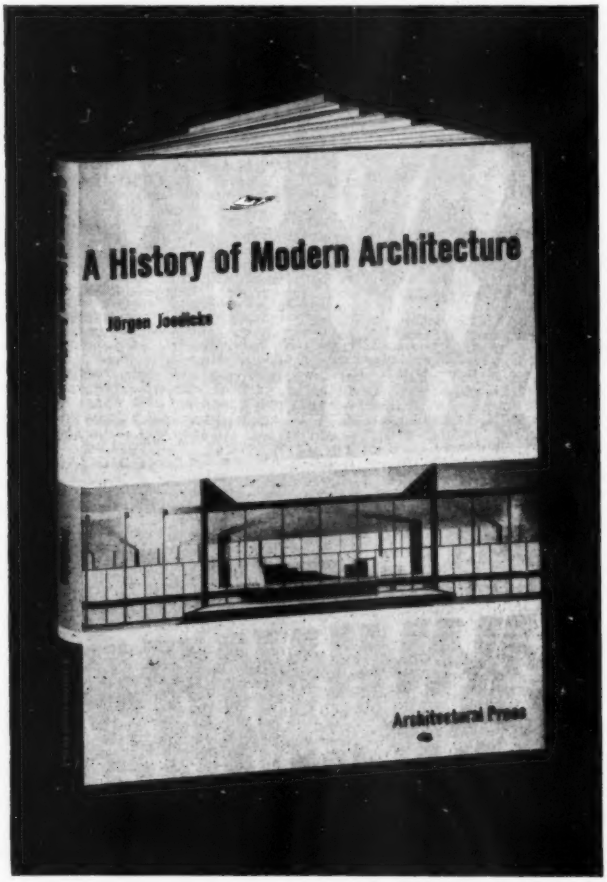


Specify

**Tuckers** HAND-MADE SANDFACED ROOFING TILES

*See our Permanent Exhibit at the Building Centre, Store Street, Tottenham Court Road, London, W.C.1. and The Scottish Building Centre, 425-427 Sauchiehall Street, Glasgow, C.2.*

**G. Tucker & Son Ltd. Loughborough, Leicestershire** **Telephone: Loughborough 2446-7** **Telegrams: "Tuckers," Loughborough**




## A History of Modern Architecture

*by Jurgen Joedicke, translated by James Palmes*

HITHERTO there has been no general history of the modern movement in architecture available in English. Professor Joedicke's book thus satisfies an important need, but it goes further than this—it is more comprehensive, yet more compact and better illustrated than any of the general histories of modern architecture available in other languages. His approach is straightforward and imposes no personal system on the material, accepting the classic distinction between the age of the Pioneers, and the age of the Masters, so that the contributions of famous architects can be found where one would expect to find them.
In addition to the dominating personalities of the movement, Professor Joedicke, who teaches at the celebrated Technische Hochschule in Stuttgart, also gives a full account of the part played by new structural materials and new spatial concepts in the creation of the new architecture, and also surveys the contributions made by the leading architectural countries of Europe and the Americas.
He thus covers the field from Joseph Paxton to Felix Candela in time, from Helsinki to Rio de Janeiro and Los Angeles in space

*Size* 10¼ *by* 7¾ *ins.* 244 *pages with* 400 *halftones and* 50 *line illustrations, a bibliography and index.* 45*s. net, postage* 2*s.* 0*d.*

**The Architectural Press,**
**9-13 Queen Anne's Gate, Westminster, SW1.**

# CLASSIFIED ADVERTISEMENTS

***Advertisements should be addressed to the Advertisement Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post Friday morning for inclusion in the following Thursday's paper.***

***Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.***

**AIR-MAIL SERVICE** available on request.

***In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (1s. 3d. for each additional week) and prepayment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.***

## Public and Official Announcements

*36s. per inch; each additional line, 3s.*

### LONDON COUNTY COUNCIL
### ARCHITECT'S DEPARTMENT
### ARCHITECTURAL DRAUGHTSMEN

Unqualified ARCHITECTURAL ASSISTANTS required in Housing Division. Candidates must have drawing board experience in an architect's office. Preference to those proposing to qualify by evening study though others considered. Full programme of new work and opportunities for promotion. Starting salaries according to age and experience. Form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council (EK/AJ/1359/6c), County Hall, S.E.1.
1498

### LONDON COUNTY COUNCIL
### ARCHITECTS AND BUILDING SURVEYORS

Vacancies in the Architect's Department, L.C.C., for Architects or Building Surveyors experienced in surveying existing buildings, preparing sketch working drawings and specifications and supervising works in progress, for the complete internal modernisation of the older types of Council flats (jobs up to £50,000), for the rehabilitation of dwellings acquired by the Council and for improvements, alterations and extensions to Council buildings (jobs up to £20,000).

Applicants should have a real interest in this type of work and the ability to act on their own judgment since the maximum opportunity will be afforded to each to carry his own jobs through from survey to completion.

Salaries up to £1,135 according to qualifications and experience (salary scales at present under review—probable new maximum of grade £1,250).

Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council (EK/AJ/1484/6b), County Hall, S.E.1. 1676

### BOROUGH OF TAUNTON
### ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments in the Borough Architect's Department.

(*a*) ASSISTANT ARCHITECTS, Grade A.P.T. IV (£1,065—£1,220 p.a.).
(*b*) ASSISTANT ARCHITECTS, Special Grade (£785—£1,070 p.a.).
(*c*) ARCHITECTURAL ASSISTANT, Grade A.P.T. II-III (£765—£880—£1,065 p.a.).
(*d*) ARCHITECTURAL DRAUGHTSMAN, General Division (£210—£595 p.a.).

Superannuable posts subject to medical examination, and to National Conditions of Service. Applications, stating age, present position and salary, qualifications, experience and names of two referees, to be sent to C. Bacon, F.R.I.B.A., Borough Architect, Flook House, Station Road, Taunton, by Friday, 1st July, 1960.

K. A. HORNE,
*Town Clerk.*
1703

### OXFORDSHIRE COUNTY COUNCIL
### COUNTY ARCHITECT

Applications are invited for the post of County Architect. The salary will be £2,550 per annum, rising, subject to satisfactory service, by one annual increment of £115 and two annual increments of £110 to a maximum of £2,885 per annum. The appointment will be subject to three months' notice on either side and to the Conditions of Service of the Joint Negotiating Committee for Chief Officers of Local Authorities.

Candidates must be members of the Royal Institute of British Architects, and preference will be given to those having had appropriate local government experience.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937-53, and the successful candidate will be required to pass a medical examination.

Applications must include the names and addresses of not more than three persons who have knowledge of the applicant and his work and to whom reference can be made. They should be returned to the Clerk of the Council, County Hall, Oxford, so as to reach him not later than first post on Friday, 1st July.

GERALD GALE BURKITT,
*Clerk of the Council.*

County Hall,
Oxford.
9th June, 1960. 1796

### CITY OF CANTERBURY
### ASSISTANT ARCHITECT £785—£1,220

Applications are invited for the above appointment in the City Architect and Planning Officer's Department.

Commencing salary according to ability and experience. The successful candidate will be engaged initially on housing projects and must have attained the necessary standard of professional qualification. Housing accommodation available if required.

Applications, with the names of two referees to the City Architect and Planning Officer, John L. Berbiers, F.R.I.B.A., A.M.T.P.I., by Wednesday, 29th June, 1960.

Canvassing will disqualify.

J. BOYLE,
*Town Clerk.*

Municipal Buildings,
Canterbury. 1784

### CITY OF ROCHESTER
### ARCHITECTURAL ASSISTANT
### (GRADE A.P.T. I, £610—£765)

Applications are invited for the appointment of Architectural Assistant in the City Surveyor's Department at a salary in accordance with Grade A.P.T. I (£610—£765).

Candidates should have a general experience, including the preparation of drawings and a knowledge of specifications, and should have passed the Intermediate Examination of the Royal Institute of British Architects or hold a qualification of equivalent standard. The commencing salary will be according to qualifications and experience.

In an appropriate case the City Council will provide the successful candidate with suitable housing accommodation and will be prepared to refund removal expenses after twelve months' service.

The appointment will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, and a satisfactory medical examination. One month's notice is required on either side.

Applications, stating age, training, qualifications, present and previous appointments and experience, together with the names and addresses of two persons to whom reference may be made, should be delivered to J. A. Peel, A.M.I.C.E., M.I.Mun.E., City Surveyor, 66, Maidstone Road, Rochester, not later than Monday, 4th July, 1960.

PHILIP H. BARTLETT,
*Town Clerk.*

Guildhall,
Rochester.
3rd June, 1960. 1726

### BOROUGH OF TAMWORTH
### ENGINEERING ASSISTANT

Applications are invited for the above appointment in the Borough Engineer and Surveyor's Department. Salary within A.P.T. Grade I. Applicants should have had a good general experience in a Municipal Engineer's office (housing experience would be an advantage). Preference will be given to applicants who have passed the Intermediate Examination of the Institution of Municipal Engineers or hold an equivalent qualification. Applications, stating age, qualifications and experience, together with names of two referees, should reach the undersigned not later than 20th June, 1960. Canvassing, directly or indirectly, will disqualify.

H. B. LEAKE,
*Town Clerk.*

Municipal Offices,
Tamworth, Staffs.
4th June, 1960. 1710

### BOROUGH OF EALING

JUNIOR ARCHITECTURAL ASSISTANT, A.P.T. I (£610—£765 plus London weighting). Must have passed Intermediate R.I.B.A. or its equivalent.

TWO ARCHITECTURAL ASSISTANTS, within scale A.P.T. IV according to experience (£1,100—£1,265 inclusive). Must hold recognised architectural qualifications.

DRAUGHTSMAN, GENERAL DIVISION (£225—£695 inclusive according to age and experience) for Civil Engineering work.

PETROLEUM OFFICER, A.P.T. I (£650—£805 inclusive) for inspection and testing of petroleum installations, etc. Car allowance.

Full particulars and form of application for these appointments obtainable from Borough Engineer and Surveyor, Town Hall, Ealing, W.5.

Closing date: 30th June, 1960.

E. J. COPE-BROWN,
1811

### ARCHITECTS
### for
### TOWN CENTRE AND INDUSTRIAL PROJECTS

Glenrothes Development Corporation requires ARCHITECTS for a variety of work including the design of INDUSTRIAL, SHOPPING and COMMERCIAL Buildings. The Corporation is about to begin the First Stage of the NEW TOWN CENTRE and the vacancies offer excellent opportunities for architects with imagination and enthusiasm.

Salaries up to £1,375 per annum according to experience.

Houses to rent available.

Medical Examination under Superannuation Scheme.

Applications to Secretary and Legal Adviser, Glenrothes Development Corporation, Glenrothes, Fife. 1737

### LONDON COUNTY COUNCIL
### QUALIFYING EXAMINATION FOR THE OFFICE OF DISTRICT SURVEYOR

An examination for the certificate of proficiency to perform the duties of district surveyor will be conducted in London in the week commencing 10th October, 1960. The minimum age limit for candidates is 25.

Possession of this certificate is necessary for appointment to positions as District Surveyor (salary scales £1,850 to £3,000 a year) or as Assistant District Surveyor (present salary scale £1,295 to £1,535 a year, plus £61 10s. a year).

Apply to the Architect to the Council (EK/AJ/1008/6), County Hall, Westminster Bridge, S.E.1, for application forms and further particulars. Completed applications to be submitted before 1st September, 1960. 9743

### QUANTITY SURVEYING ASSISTANTS
### GRADE III
### REQUIRED BY
### AIR MINISTRY
### IN THE PROVINCES

Duties include abstracting and billing, site measurement and preparation of estimates. Candidates must hold O.N.C. (Building or Builders Quantities) or equivalent and have good experience under Quantity Surveyor or Building Contractor. Knowledge W.D. Schedule an advantage. Financial assistance and time off given for recognised courses of study. Promotion and pension prospects. Five-day week with 18 days' paid leave a year initially. Overseas tours for which special allowances granted. Salary ranges from £680 (at age 26) to £850. Commencing salary dependent upon age, qualifications and experience.

Applicants, who must be natural born British subjects, should write stating age, qualifications and previous appointments including type of work done, to Manager (P.E.2), Ministry of Labour, Professional and Executive Register, Atlantic House, Farringdon Street, London, E.C.4. No original testimonials should be sent. Candidates selected will normally be interviewed in London and certain expenses reimbursed. Only applicants selected for interview will be advised. 1309

AIR MINISTRY require JUNIOR and SENIOR WORKERS UP in Quantities Division in London. **Must be fully experienced and competent to** Work Up entire Bills of Quantities. **Candidates** must hold O.N.C. or C. & G. (Quantities) or equivalent technical qualification. Financial assistance and time off given for recognised courses of study. Promotion and pension prospects. Five-day week with 18 days paid leave a year initially. Salary ranges (Junior) from £720 (at age 26) to £900 and (Senior) £794 (at age 26) to £1,065. Applicants, who must be natural born British subjects, should write stating age, qualifications and experience to the Manager, (PE.1234), Ministry of Labour, Professional and Executive Register, Atlantic House, Farringdon Street, London, E.C.4. No original testimonials should be sent. 1603

### LINDSEY COUNTY COUNCIL
### PLANNING DEPARTMENT

Applications are invited for the following appointments:—

(*a*) A.P.T. II (£765—£880) or SPECIAL GRADE (£785—£1,070). Car allowance. Applicants must have passed in Intermediate or Final Examination of the Town Planning Institute, or be University Graduates with at least two years' post graduate experience in a county planning department.

(*b*) MISCELLANEOUS GRADE III (£525—£590) or A.P.T. I (£610—£765). Applicants should have completed a three-year period of training or service in a planning, architect's, or surveyor's office or be University Graduates in geography, and must be competent draughtsmen and surveyors.

Grade on appointment and commencing salary in both cases will have regard to qualifications and experience. Superannuation and N.J.C. conditions of service as approved by the County Council. Canvassing will disqualify. Relationship to any member or senior officer of the Council to be disclosed in writing by applicants.

Applications, with particulars of training, experience, and names of two referees, to County Planning Officer, County Offices, Newland, Lincoln, not later than 27th June, 1960. 1714

### BOROUGH OF ILKESTON

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT within the Grade A.P.T. IV (£1,065—£1,220).

Commencing salary to be according to qualifications and experience.

Housing accommodation available. Canvassing disqualifies.

Application forms and conditions of appointment obtainable from A. O. Marshall, Borough Surveyor & Water Engineer, Town Hall, Ilkeston, to whom they are to be returned by Thursday, 30th June, 1960.

J. YATES,
*Town Clerk.*
1731

### METROPOLITAN BOROUGH OF WANDSWORTH
### ARCHITECTURAL STAFF

Applications invited from unqualified or partly qualified ARCHITECTURAL ASSISTANTS for posts grades A.P.T. I, II and III (£650—£1,110). Grade and salary according to ability and experience. Application forms from Borough Engineer, Municipal Buildings, S.W.18. Closing date 4th. July.

J. NOEL MARTIN,
*Town Clerk.*
1893

TAYLOR WOODROW CONSTRUCTION LIMITED
*require*
**ARCHITECTURAL STAFF**
at the Head Office in
**SOUTHALL**

There are vacancies for Qualified and Intermediate Architectural Assistants capable of independent work and for experienced Architectural draughtsmen in a department working on varied Industrial and Commercial schemes. Congenial working conditions. Restaurant. Pension Scheme.

**Apply to: Personnel Manager,**
**345 Ruislip Road, Southall, Middx.**
**(WAXlow 2366)**

**APPLIED LETTERS**

All sizes, types and materials
for internal or external use.
Illuminated letters and box signs.
Brochures sent on request.

**WARD & CO. (letters) LTD.**
6 – 12 WILDER ST · BRISTOL 2 · TELEPHONE BRISTOL 21536

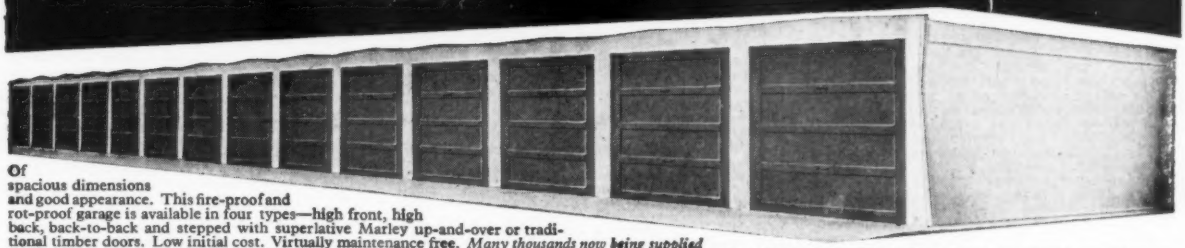
SHOREDITCH BOROUGH COUNCIL has vacancies for qualified Senior Architects for varied and interesting programme of important Public Buildings.

**SENIOR ARCHITECTS**

**Salaries £1110 - £1420 p.a.**

Applications to: BOROUGH ARCHITECT, TOWN HALL, E.C.1.

**MARLEY MULTIPLE GARAGES**
IN PRECAST CONCRETE



Of spacious dimensions and good appearance. This fire-proof and rot-proof garage is available in four types—high front, high back, back-to-back and stepped with superlative Marley up-and-over or traditional timber doors. Low initial cost. Virtually maintenance free. *Many thousands now being supplied and erected for Architects and Local Authorities throughout Great Britain.* Site work can also be undertaken, if required. We shall be pleased to submit quotations on request. Marley make the best garages.

MARLEY CONCRETE LIMITED Dept. H2 Peasmarsh, Guildford, Surrey (Head Office) Guildford 69171 · Shurdington, Nr. Cheltenham, Glos. Shurdington 334/5 · Hatchpond Road, Waterloo, Poole, Dorset. Broadstone 626 · London Showrooms: 251 Tottenham Court Road, W.1.



**PAVE THE WAY FOR HARDER WEAR**

For factory and other floors exposed to heavy traffic, impact and corrosion, Accrington 'Nori' Paving Bricks may be specified with the utmost confidence. Made from the same material as the famous Accrington Engineering Bricks. Samples on request.

THE ACCRINGTON BRICK & TILE CO. LTD., ACCRINGTON
*Telephone:* Accrington 2684

**ACCRINGTON 'NORI' PAVING BRICKS**

CAMBRIDGESHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Appointment of:

(*a*) SENIOR ASSISTANT ARCHITECT, Grade A.P.T. V (£1,220—£1,375).

(*b*) ASSISTANT ARCHITECT, Grade A.P.T. IV (£1,065—£1,220).

(*a*) Applicants should be Associates of the Royal Institute of British Architects and have had extensive experience of the design and construction of Schools and other County Buildings, and should be capable of supervising assistant staff.

(*b*) Applicants should be Associates of the Royal Institute of British Architects and have had experience of the design and construction of Schools and other County Buildings.

In each case the commencing salary will be in accordance with experience.

The appointments are subject to the Local Government Superannuation Acts 1937 to 1953, the National Scheme of Conditions of Service, a satisfactory Medical Examination and terminable at one month's notice on either side.

Applications, stating age, present salary, present and previous appointments, details of training and experience, together with the names and addresses of two referees, should be submitted to the undersigned, not later than Tuesday, 5th July, 1960.

CHARLES PHYTHIAN,
*Clerk of the County Council.*

Shire Hall,
Cambridge. 1711

NORTH RIDING COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications are invited for a post of SENIOR ASSISTANT ARCHITECT from Associates of the R.I.B.A., by examination. Salary J.N.C. Grade B—£1,320 × £55 to £1,485. Experience with educational buildings required.

National Scheme of Conditions of Service and the Local Government Superannuation Acts apply, and medical examination required. Applications should state age, qualifications and experience, give particulars of previous and present appointments, and names of three persons to whom reference can be made, and be delivered to the undersigned not later than 2nd July, 1960. Canvassing, directly or indirectly, will disqualify and candidates should state whether they are related to any member of, or senior officer under, the Council.

R. A. WOTHERSPOON,
*Clerk of the County Council.*

County Hall,
Northallerton,
Yorkshire.
9th June, 1960. 1800

ADMINISTRATIVE COUNTY OF LEICESTER
SENIOR ASSISTANT ARCHITECT
£1,075—£1,220

Candidates must be chartered members of the R.I.B.A., have had considerable experience and be capable of taking charge of contracts from inception to completion.

Lodging allowance and removal expenses may be paid to a married man.

Apply to County Architect, 123, London Road, Leicester. 1763

UNIVERSITY COLLEGE OF NORTH STAFFORDSHIRE
ASSISTANT ARCHITECT

Scale: £765 × £25 (1) × £30 (3)—£880 p.a.

Applications are invited for the post of Assistant Architect on Staff of Architect and Buildings Officer. Applicants should have passed Intermediate Examination of R.I.B.A. and be studying for Final. Good general experience in design and construction essential. Duties may include work on buildings for teaching and research, students' hostels, staff residences, and general purposes buildings and services. The post will be included in College Superannuation Scheme. Further particulars may be obtained from Architect and Buildings Officer, The College, Keele, Staffs., to whom three copies of application, giving full details of age, education, qualifications, experience, etc., and names of three referees, should be sent not later than June 30th, 1960. 1748

BRITISH RAILWAYS
ASSISTANT ARCHITECTS

Assistant Architects required for the Architect's Office of British Railways, 32, Elmbank Crescent, Glasgow. Good designing ability and A.R.I.B.A. qualifications essential. Commencing salary between £1,100 and £1,200 per annum.

Candidates should apply in writing to the Chief Civil Engineer, British Railways, St. Enoch Station, Glasgow, C.1. 1724

BRITISH OVERSEAS AIRWAYS CORPORATION invite applications for ASSISTANT STAFF ARCHITECT in their PROPERTIES & SERVICES BRANCH at LONDON AIRPORT. Applicants should preferably be single and available for world travel with ability to assume responsibility and act on own initiative. The post calls for first class designers with knowledge of shop fitting work and competency in rapid sketch planning and estimating plus ability to control medium sized projects throughout. Industrial experience will be an advantage with aptitude for dealing speedily with contracts involving alterations to and maintenance of existing property. Salary on commencement in the range of £940 to £1,290 per annum. This post is pensionable and covered by Staff Life and Accident Insurance. Apply: Recruitment Manager, B.O.A.C., London Airport, Hounslow, Middlesex. 1868

STAFFORDSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited from suitably qualified candidates for the following post(s):—

ASSISTANT ARCHITECTS
GRADE A.P.T. V (£1,220—£1,375).
GRADE A.P.T. IV (£1,065—£1,220).
Candidates must be Associates of R.I.B.A., and suitably experienced.
SPECIAL GRADE (£785—£1,070).
These posts are particularly suitable for recently qualified Architects.
GRADE A.P.T. II (£765—£880).
Applicants must hold Intermediate R.I.B.A.

ASSISTANT QUANTITY SURVEYORS
GRADE A.P.T. IV (£1,065—£1,220).
Applicants must be A.R.I.C.S. (Quantities) and thoroughly experienced in the preparation and management of contracts, and contract settlement. Car allowance. The Council has a scheme for loans towards the purchase of motor vehicles.
GRADE A.P.T. II (£765—£880).
Applicants must hold Intermediate R.I.C.S.

The Department has an extensive and interesting programme of work for all Committees of the County Council.

The appointment(s) will be subject to:—

(*a*) The National Scheme of Conditions of Service.

(*b*) The Local Government Superannuation Acts and the passing of a medical examination.

The County Council are prepared to grant a lodging allowance of 35s. per week to married applicants maintaining a home outside the geographical County for a period of six months, also second-class rail travel home every second month during the initial six months. The Council are also prepared to give consideration to the granting of financial assistance in appropriate cases towards removal expenses.

There is a possibility that housing may be made available in special circumstances.

Forms of application, which must be returned by the 6th July, 1960, may be obtained from the County Architect, Green Hall, Lichfield Road, Stafford.

T. H. EVANS,
*Clerk of the County Council.*
1930

CITY AND COUNTY OF BRISTOL
ARCHITECT'S COMMITTEE

Applications invited for the following permanent staff appointments from applicants who have the qualification shown or equivalent qualification:—

SENIOR ASSISTANT ARCHITECTS. Grade A.P.T. IV (£1,065—£1,220 p.a.). Final R.I.B.A.

SENIOR ASSISTANT ARCHITECTS. Special Scale (£785—£1,070 p.a.). Parts 1 & 2 Final R.I.B.A.

ARCHITECTURAL ASSISTANTS. Grade A.P.T. II (£765—£880 p.a.). Intermediate R.I.B.A.

ARCHITECTURAL ASSISTANT. Grade A.P.T. I (£610—£765 p.a.). Intermediate R.I.B.A.

SENIOR QUANTITY SURVEYORS. Special Scale (£785—£1,070 p.a.). Final R.I.C.S.

LAND SURVEYOR. Grade A.P.T. I (£610—£765 p.a.). Intermediate R.I.C.S. (Land Surveying or Building Surveying Section).

The department has an interesting and varied programme of work including the design and construction of Colleges of Art and Further Education, Secondary Schools, Markets, Baths, Libraries and redevelopment projects including blocks of dwellings up to 15 storeys. Facilities will be given for design and contract experience and good opportunities exist for men with drive and initiative to assist in works of major architectural importance.

Five-day week. Assistance with removal expenses.

Housing accommodation available, if necessary, at an economic rent.

Details and application forms, returnable by Monday, July 11th, from City Architect, Council House, Bristol, 1. 1869

BOROUGH OF BRENTFORD AND CHISWICK
APPOINTMENT OF ASSISTANT ARCHITECT

Applications are invited for this post on Special Grade (£830—£1,115 p.a.). Commencing salary will be in accordance with qualifications and experience. Preference will be given to candidates who have passed the examination for A.R.I.B.A.

The Council may be prepared to assist in the provision of housing accommodation.

Applications to Borough Engineer and Surveyor, not later than 30th June, 1960.

W. F. J. CHURCH,
*Town Clerk.*

Town Hall,
Chiswick, W.4. 1880

BIRMINGHAM REGIONAL HOSPITAL BOARD
ASSISTANT ARCHITECTS

Salary £905—£1,310 per annum. Must be registered Architect by examination. Post not necessarily restricted to those with previous hospital experience and offers opportunities for gaining knowledge and experience of the whole field of hospital architecture ranging from adaptation schemes to comprehensive new hospital projects including ward units, operating theatres, outpatients' departments, maternity units, X-ray departments, kitchens, boiler houses, staff housing accommodation and numerous other types of building. Superannuable. Five-day week. Generous annual leave. Applications to Secretary, 10, Augustus Road, Birmingham, 15, by 7th July, 1960, stating qualifications, age, experience, present position and salary and naming two referees. 1542

CITY OF CARDIFF
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

SENIOR ASSISTANT ARCHITECTS—A.P.T. Grade III/IV, £880—£1,220 per annum.

SENIOR ASSISTANT QUANTITY SURVEYORS—A.P.T. Grade IV, £1,065—£1,220 per annum.

Applicants should be fully qualified and experienced.

General Conditions of Appointment may be obtained from the undersigned.

Applications accompanied by the names and addresses of two referees, appropriately endorsed, should be delivered to me not later than the 11th July, 1960.

S. TAPPER-JONES,
*Town Clerk.*

City Hall,
Cardiff.
June, 1960. 1931

BOROUGH OF COLCHESTER
BOROUGH ENGINEER'S DEPARTMENT
ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment at a salary in accordance with A.P.T. Grade I (£610—£765) per annum according to experience.

Applicants must have a sound knowledge of building construction, able to prepare working drawings, make surveys and use a level. Preference will be given to those who, in addition, are studying for the R.I.B.A. examinations.

Applications endorsed "Architectural Assistant" stating age and full particulars of experience, etc accompanied by the names of two referees should be delivered to The Borough Engineer, 1, West Stockwell Street, Colchester, not later than Friday, the 15th July, 1960.

Canvassing will disqualify and applicants must state whether they are related to any member or senior officer of the Council.

N. CATCHPOLE,
*Town Clerk.*

Town Hall, Colchester.
24th June, 1960. 1882

UNIVERSITY OF ABERDEEN
REVISED ADVERTISEMENT

SURVEYOR, ARCHITECT, or person similarly qualified, required for post under Assistant Secretary for Lands and Buildings. Work mainly on new buildings. Initial salary between £1,050 and £1,350, with appropriate placing, on scale rising to £1,650. Superannuation (F.S.S.U.), child allowance, and removal allowance.

Further particulars from The Secretary, The University, Aberdeen with whom applications (eight copies) should be lodged not later than 24th August, 1960. Applicants outside the British Isles may submit one copy of application. 1886

AMENDED ADVERTISEMENT
BOROUGH OF LUTON

Applications are invited for the following appointments:—

(*a*) SENIOR ASSISTANT ARCHITECTS, A.P.T. IV/V (£1,065—£1,375).

(*b*) ARCHITECTURAL ASSISTANTS, A.P.T. I/ Special (£610—£1,070).

Applicants for (*a*) must be Chartered Architects and the point of commencement within the linked grades will be dependent on qualifications and experience. The Council reserve the right to impose a proficiency bar at the maximum of A.P.T. IV (£1,220) but will be prepared to appoint suitably experienced applicants in or progressing to A.P.T. V.

Under (*b*) the Council will consider applications from candidates who have completed professional training but have not passed their final examinations. The grades within the range at which appointments will be made will depend on qualifications and experience.

In both cases consideration will be given to the provision of housing accommodation and payment of reasonable removal expenses.

Luton is a rapidly developing borough with a large and varied programme of capital works in hand or projected which offers exceptional opportunities of gaining experience.

Further particulars and forms of application may be obtained from The Borough Architect, Town Hall, Luton, by whom applications should be received not later than 1st July, 1960. 1887

PETERLEE DEVELOPMENT CORPORATION
APPOINTMENT OF
SENIOR ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment in the Chief Architect's Department. Applicants should be experienced in contract administration and the preparation of constructional details relative to housing and town centre design.

Salary Grade—New Towns Grade A.P.T. VI—£1,163—£1,390 p.a. commencing according to experience and qualifications.

The appointment which is superannuable is subject to the Corporation's Conditions of Service and will be terminable by one month's notice in writing on either side. The successful applicant will be required to pass a medical examination.

Housing accommodation will be made available if necessary.

Applications stating age, experience and qualifications and giving the names of two persons to whom reference can be made should reach the undersigned not later than Monday, 4th July, 1960.

A. V. WILLIAMS,
*General Manager.*

Shotton Hall,
Peterlee,
Co. Durham. 1538

CITY OF SHEFFIELD
CITY ARCHITECT'S DEPARTMENT
APPOINTMENT OF GROUP LEADER ARCHITECT
GRADE A.P.T. V (£1,220—£1,375)

Applications are invited from suitably qualified persons for this permanent appointment on the staff of the City Architect, Mr. J. L. Womersley.

The post is in the Education and General Section which has an intensive programme of new schools, colleges and public buildings of all kinds. The successful candidate will be required to design and supervise to completion major works of this nature.

Applications, stating age, education and training, qualifications and experience, present and past appointments, together with the names and addresses of two referees, should reach me by Monday, 4th July, 1960.

JOHN HEYS,
*Town Clerk.*

Town Hall,
Sheffield, 1. 1929

KENT COUNTY COUNCIL

Applications are invited for the following appointments:—

(*a*) ASSISTANT COUNTY PLANNING OFFICER. Scale C-D (£1,385—£1,755).

This post will become vacant in the near future. This senior appointment will be principally for Development Plan work and the control of development which raises special problems in relation thereto. Candidates should have extensive experience of all aspects of statutory town and country planning work and possess administrative ability. The scope of duties and location will to some extent depend on aptitude and wishes of the successful applicant.

(*b*) SENIOR PLANNING ASSISTANT, Grade A.P.T. IV-V (£1,075—£1,375).

Extensive experience of landscape design and rural planning problems is required, or alternatively experience of civic design, particularly with a local planning authority or a new town corporation, including the redevelopment of central areas.

(*c*) SENIOR PLANNING ASSISTANTS. Grade A.P.T. IV (£1,065—£1,220) or Special Grade (£785—£1,070).

Applicants for Grade IV posts should have at least two years' experience of town and country planning work in a responsible capacity, and according to qualifications and experience may be used for either Development Plan and survey or development control work.

(*d*) ARCHITECTURAL ASSISTANT. Grade A.P.T. IV (£1,065—£1,220) or Special Grade (£785—£1,070).

This appointment is principally for architectural control duties but there are opportunities for work in other fields.

(*e*) PLANNING ASSISTANTS. Grade A.P.T. I-II (£610—£880) or A.P.T. I (£610—£765).

For Development Plan and Survey or development control work.

Commencing salaries according to qualifications and experience.

The County Council is undertaking an extended programme in relation to the preparation of Town Maps and the redevelopment of central areas in addition to the statutory review of its approved Development Plan. Several new posts are available for this work.

Qualifications required:

Posts (*a*), (*b*) and (*c*): Corporate membership of the Town Planning Institute. For post (*b*) corporate membership of the Institute of Landscape Architects or of the Royal Institute of British Architects in addition will be an advantage.

Post (*d*): Corporate membership of the Royal Institute of British Architects.

Posts (*e*): University degree or diploma or a recognised Intermediate professional examination related to any technical aspect of the work of a Planning Department.

The National Scheme of Conditions of service applies and registered disabled persons will be considered. Five-day week.

Applications, with names of two referees, to County Planning Officer, County Hall, Maidstone, by 11th July, 1960. 1540

COUNTY BOROUGH OF SOUTHAMPTON

Applications are invited for the following appointment:

ASSISTANT ARCHITECT, Grade A.P.T. IV, £1,065—£1,220. Applicants must hold the qualification A.R.I.B.A. and have had wide experience in housing design and construction, including multi-storey flats and shopping centres, in connection with redevelopment schemes in urban areas.

The appointment is subject to N.J.C. conditions of service. Housing accommodation available in approved cases and approved removal expenses reimbursable up to a maximum of £50. Application forms obtainable from the Borough Engineer and Surveyor, Civic Centre, Southampton, returnable by Monday, 4th July, 1960. 1543

BEDFORDSHIRE COUNTY COUNCIL

Applications are invited for the following posts:

(*a*) SENIOR ARCHITECTS, A.P.T. V (£1,220—£1,375) and A.P.T. IV (£1,065—£1,220).

(*b*) ARCHITECTS, Special Scale (£785—£1,070).

Opportunities exist for newly-qualified Architects to have responsibility at all stages of the project within a group system of office organisation. Applicants will be appointed at points within the grade in accordance with qualifications and experience.

Application forms obtainable from the County Architect, Shire Hall, Bedford. 1866

CITY OF LEICESTER EDUCATION COMMITTEE
APPOINTMENT OF SURVEYOR

Applications are invited from chartered and/or registered architects for appointment as Surveyor to the Education Commitee. Salary in accordance with the J.N.C. recommendations, Grade C—present scale £1,385, rising by annual increments to a maximum of £1,620 per annum.

The appointment will be subject to the provisions of the Local Government Superannuation Act. Duties will include responsibility for minor building works, the maintenance of all educational buildings and playing fields (and control of staff therefor) and the provision of all school furniture. Comparable local education authority experience in a responsible capacity, including control of maintenance staff, essential.

Further particulars and form of application (which should be completed and returned not later than 14 days from the appearance of this advertisement) may be obtained from the Director of Education, Newarke Street, Leicester, on receipt of a stamped addressed foolscap envelope. 1544

CITY OF CARLISLE
CIVIC CENTRE SCHEME, PHASE 1.
APPOINTMENT OF CLERK OF WORKS

Applications are invited for this appointment in connection with the Supervision of the erection of the New Civic Centre in Carlisle, construction of which will commence late in 1960.

The Building is in reinforced concrete construction, multi-storied in parts, and the term of the engagement for the first phase will be approximately two years. It may be that continuing after the first stage will be the construction of the New Assembly Hall.

The salary will be within the range of £1,000—£1,375 per annum according to experience and qualifications and the term of engagement will be on a temporary basis.

Applications for consideration to be received by me by Friday, 15th July, 1960, stating age, present employer, nature of present employment and previous experience as Clerk of Works with two recent references.

H. D. A. ROBERTSON,
*Town Clerk.*

15, Fisher Street,
Carlisle. 1864

HORNCHURCH URBAN DISTRICT COUNCIL
CLERK OF WORKS (BUILDING)

Applications are invited from suitably qualified persons for the above temporary appointment. Applicants must have had considerable experience in the supervision of housing construction, have a sound knowledge of all the trades in connection therewith, including the setting out and measurements of all works on the site, and the keeping of the necessary records.

The salary to be paid is within the range of the Miscellaneous Division Grade VI, £715—£775, per annum, and in addition an amount equivalent to London weighting will be paid.

The post is subject to the appropriate N.J.C. Conditions of Service, the normal hours worked in the building trade, a medical examination and termination by one month's notice on either side.

Applications, on the forms provided by the undersigned, stating qualifications, experience and the names of two referees, must be returned not later than Saturday, 2nd July, 1960.

P. L. COX,
*Clerk of the Council*

Council Offices,
Billet Lane,
Hornchurch, Essex. 1865

COUNTY BOROUGH OF BRIGHTON
ASSISTANT HEATING AND VENTILATING ENGINEER

Applications are invited for the appointment of an Assistant Heating and Ventilating Engineer in the Borough Surveyor's Department, Grade A.P.T. V (£1,220—£1,375).

Applicants must be Associate Members of the Institution of Heating and Ventilating Engineers and have experience in the design of low pressure hot water heating systems and allied plant for schools and other Council buildings.

Application forms may be obtained from D. J. Howe, M.I.C.E., M.I.Mun.E., Borough Surveyor, Engineer and Planning Officer, 26/30, King's Road, Brighton, and are to be returned not later than noon on 11th July, 1960.

W. O. DODD,
*Town Clerk.*
1867

Town Hall,
Brighton, 1.
13th June, 1960.

GLASGOW CORPORATION
ASSISTANT ARCHITECTS
TOWN PLANNERS
QUANTITY SURVEYORS

The Architectural and Planning Department of the Corporation of the City of Glasgow has vacancies for a number of qualified Assistants in the above professions.

The Department has in hand a large, varied and interesting programme of works including comprehensive redevelopment, multi-storey flats, schools and civic buildings. The work will provide scope for personal initiative in the preparation of designs and details of schemes upon which construction work will follow.

The salary scale for these Assistantships is up to £1,385 with placing according to experience.

Form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

A. G. JURY,
*City Architect and Planning Officer.*
1938

BEDLINGTONSHIRE URBAN DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT

Applications are invited for the undermentioned appointment in the Surveyor's Department.

ARCHITECTURAL ASSISTANT. Salary in accordance with Special Grade, £785—£1,070.

Applicants must have passed the Intermediate Examination of the Royal Institute of British Architects, or its equivalent, and have had considerable experience in architectural work, particularly housing and shop redevelopment. Housing accommodation will be made available in approved circumstances.

Applications, accompanied by names of three referees, to be delivered to the undersigned not later than Saturday, the 9th July, 1960.

F. S. FORSTER,
*Clerk to the District Council.*

Council Offices,
Bedlington,
Northumberland.
16th June, 1960. 1944

LONDON ELECTRICITY BOARD
ARCHITECTURAL ASSISTANT

Applications are invited for the above position in the Chief Engineer's Department near Waterloo.

Applicants should be studying for or have passed the Intermediate Examination of the R.I.B.A., be capable draughtsmen and have had several years' experience in an architect's office.

The post is graded upon Schedule "D" of the National Joint Board Agreement as Grade 5—£830 to £940 per annum, inclusive of London allowance.

Application form obtainable from Personnel Officer, 46, New Broad Street, E.C.2, to be returned completed within 14 days of the publication date of this advertisement. Please quote ref. PER/V/2997/A. 1933

CITY OF ELY URBAN DISTRICT COUNCIL
ASSISTANT ARCHITECT/SURVEYOR

The Council invite applications for the above appointment in the Engineer/Surveyor's department at a salary (according to qualifications and experience) within one of the following grades:—

Grade A.P.T. I (£610—£765).
Grade A.P.T. II (£765—£880).
Special Grade (£785—£1,070).

Experience of housing work would be an advantage.

Housing accommodation may be made available (if required).

Applications stating age, qualifications, previous and present appointments and salaries, together with names and addresses of two referees, should reach the undersigned not later than Saturday, 9th July, 1960.

J. E. WATKINS,
*Clerk of the Council.*

Urban Council Offices,
Lynn Road,
Ely,
Cambs. 1854

DENBIGHSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT,
WREXHAM

Applications are invited for the following appointments in the above Department, *viz*:—

(*a*) SENIOR ARCHITECTURAL ASSISTANTS (Two). Special Scale (Salary £785—£1,070 per annum).

(*b*) JUNIOR ARCHITECTURAL ASSISTANTS (Two). A.P.T. Grade II (Salary £765—£880 per annum).

(*c*) QUANTITY SURVEYING ASSISTANT. Special Scale (Salary £785—£1,070 per annum).

(*d*) QUANTITY SURVEYING ASSISTANT, A.P.T. Grade II (Salary £765—£880 per annum).

The Department is engaged upon a building programme of new Schools and extensions to existing Schools, County Offices, etc., and the above posts offer opportunities and interesting work.

Contribution made towards removal expenses and subsistence allowance to married officers considered.

Further details with form of application can be obtained from me. Completed forms to be returned by 9th July, 1960.

W. E. BUFTON,
*Clerk of the County Council.*

County Offices,
Ruthin,
Denbighshire. 1855

BOROUGH OF HARROW

Vacancies exist for QUANTITY SURVEYING ASSISTANTS in the Department of the Borough Engineer & Surveyor.

Salary £765 per annum, plus London "Weighting" (Maximum of A.P.T. Grade I) or £880 per annum plus London "Weighting" (Maximum of A.P.T. Grade II) according to qualifications and experience.

The Council is unable to provide housing accommodation but contributions towards removal expenses will be considered.

The appointments will be subject to the Local Government Superannuation Acts; and to the National Joint Council's Scheme of Conditions of Service.

Application forms are obtainable from me, to whom they should be returned not later than Saturday, 9th July, 1960.

D. H. PRITCHARD,
*Town Clerk.*

Harrow Weald Lodge,
92, Uxbridge Road,
Harrow, Middx. 1908

THE UNIVERSITY OF LIVERPOOL

The Liverpool School of Architecture has two vacancies for Lecturers and Studio Instructors. The salary range is £1,050—£1,850 per annum; the initial salary within the range £1,050—£1,475 per annum, according to age, qualifications and experience.

Applications from young Architects with research interests would be welcomed. There will be opportunities for specialised practical experience.

Applications, stating age, academic qualifications and experience, together with the names of three referees, quoting reference CV/AJ should be received not later than 18th July, 1960 by the Registrar, from whom further particulars of the conditions of the appointment may be obtained. 1858

---

BOROUGH OF OLDBURY

Applications are invited for the following appointments on the staff of the Borough Surveyor:—

(*a*) SENIOR ARCHITECTURAL ASSISTANT, Salary A.P.T. Grade IV (£1,065-£1,220).

(*b*) ARCHITECTURAL ASSISTANT, Salary A.P.T. III (£880-£1,065).

Candidates should be well trained and experienced in the design and preparation of schemes and supervising contracts in connection with General Housing including Multi-storey Flats, Public Buildings, School Buildings and Minor Improvements and Maintenance Works.

The appointments will be superannuable subject to the National Conditions of Service and to the selected candidates passing a medical examination.

Applications giving particulars of age, qualifications and experience to be sent to the undersigned not later than the 4th of July, 1960.

KENNETH PEARCE,
*Town Clerk.*

Municipal Buildings,
Oldbury.
June, 1960. 1889

---

THE CORPORATION OF THE CITY OF GLASGOW
ARCHITECTURAL AND PLANNING DEPARTMENT
ASSISTANT ARCHITECTS

Vacancies exist for a number of qualified Assistant Architects in this Department, which has in hand a large and interesting programme of works including redevelopment involving multi-storey flats and school buildings. The work will provide scope for initiative in preparing designs and details for schemes on which construction work is intended to be started soon.

The salary scale is up to £1,385 with placing according to experience.

Form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

A. G. JURY,
*Principal Architect and Planning Officer.* 1730

---

BOROUGH OF WATFORD

Watford is a pleasant, thriving town in South West Hertfordshire, in the Green Belt and with easy access to the open country. Although within easy reach of London it has a distinct civic consciousness and cultural, educational, shopping and transport facilities are excellent.

The Corporation has a large number of projects in hand and envisaged, including Swimming Bath, Library extensions, multi-storey buildings, flatted factories and housing, and expansion of the Borough Engineer, Surveyor and Architect's Department is contemplated to handle these schemes.

Applications are invited from suitably qualified candidates for:—

(*a*) ASSISTANT ARCHITECT. Salary within Grade APT IV (£1,065—£1,220 per annum).

(*b*) ARCHITECTURAL ASSISTANTS. Salary within Grades A.P.T. II/III (£765—£1,065 per annum).

(*c*) ARCHITECTURAL ASSISTANT. Salary within Grade A.P.T. I/II (£610—£880 per annum).

The Assistant appointed to post (*a*) will be a Section Leader and will carry a considerable amount of responsibility.

Commencing salaries will be commensurate with experience and ability and Housing accommodation will be provided for those requiring it.

Applications to be sent to the undersigned not later than 11th July, 1960.

F. C. SAGE, A.M.I.C.E., M.I.Mun.E., Regd. Architect,
Borough Engineer, Surveyor and Architect.
Town Hall.
Watford, Herts. 1909

---

LONDON COUNTY COUNCIL
ARCHITECTS' DEPARTMENT

ARCHITECTS (up to £1,250) required for Housing, Schools, General and Special Works Divisions. Full and varied programme of new work including schools, multi-storey flats and town development. Starting salaries according to qualifications and experience. Particulars and form from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ/1639/6), County Hall, S.E.1. 1874

---

SURREY COUNTY COUNCIL

Applications invited from persons with necessary qualifications for appointment of ASSISTANT ARCHITECT GRADE V. (£1,220-£1,375 p.a. plus £45 p.a. London Allowance). Must be A.R.I.B.A.

Applications stating fully age, qualifications, experience and present salary, accompanied by copies of three testimonials, to County Architect, County Hall, Kingston, as soon as possible. 1913

---

NEWCASTLE REGIONAL HOSPITAL BOARD
EXPANSION OF ARCHITECTURAL DEPARTMENT
P. H. KNIGHTON, M.B.E., A.R.I.B.A., REGIONAL ARCHITECT

1. ARCHITECTURAL RESEARCH FELLOWSHIP

In connection with the very considerable expansion of the hospital building programme now imminent, it has been decided to create a RESEARCH FELLOWSHIP to further investigation into the Design and Equipping of Hospitals. The investigation is being promoted by the Regional Hospital Board in association with the Board of Governors of the United Newcastle-upon-Tyne Hospitals and the appointment will be for a period of three years.

The salary scale will be £1,300 × £60 (2)—£1,420 and the post will be superannuable in accordance with the National Health Service regulations.

The architect appointed will be attached to the staff of the Regional Architect and be responsible through him to a Steering Committee representing the two boards.

It is intended that initially the research will be directed towards means of achieving easily cleaned finishes in operating suites and to establishing a small permanent exhibition of models, samples, photographs and drawings to illustrate approved types. The investigation will subsequently deal with the design and equipping of a number of other hospital departments.

Applicants should preferably be within the age group 28 to 32, should be registered architects and Associate Members of the Royal Institute of British Architects, and should possess both enthusiasm and a marked ability for architectural research and the presentation of its results. The man appointed will be given opportunities for travel both in the British Isles and on the Continent to see modern hospital buildings.

To a keen and able architect the post offers an exceptional opportunity for becoming well versed in the techniques of designing and equipping modern hospitals and thus for fitting himself for future advancement.

2. ARCHITECTURAL STAFF

As the Board is in the process of increasing considerably its Architectural Department in Newcastle to deal with a programme at present totalling about £12 million, applications are also invited for the following (superannuable) posts:—

ASSISTANT ARCHITECTS (£905 × £35 (1) × £45 (6) × £50 (2)—£1,310). Applicants must be registered architects. Increments can be given above the bottom of the grade in accordance with relevant practical experience since qualifying.

ARCHITECTURAL ASSISTANTS (£625 × £30 (8) × £35 (1)—£900). Inter R.I.B.A. and some practical experience.

ARCHITECTURAL DRAUGHTSMEN (£475 × £25 (6) × £30 (2)—£685). Applicants should have had 3 years' previous experience in an architect's drawing office and be neat and quick draughtsmen.

Evening study facilities are available at King's College of Durham University in Newcastle.

Applications should give details of professional training, qualifications, experience and posts held, present salary and any other relevant information, should be accompanied by the names of three architectural referees, and should reach the Secretary to the Board, Benfield Road, not later than 6th July, 1960. 1910

---

ADMINISTRATIVE COUNTY OF LEICESTER

ARCHITECTS required to join special group, engaged on the design of New County Offices.

(*a*) SENIOR ASSISTANT ARCHITECT £1,220—£1,375.

(*b*) ASSISTANT ARCHITECT £785—£1,070.

Candidates for (*a*) must be A.R.I.B.A. and have had considerable office experience, preferably on large contracts and for (*b*) have passed parts one and two of the R.I.B.A. examination and be capable of executing working drawings.

Further particulars and forms of application may be obtained from The County Architect, 123, London Road, Leicester, to whom they should be returned not later than 15th July, 1960.

Removal expenses and lodging allowance may be paid to a married man. 1911

---

CITY ARCHITECT'S OFFICE, MANCHESTER

Applications invited for the appointment on the permanent staff of:

(1) Deputy Chief Structural Engineer. Candidates must be A.M.I. Struct. E. or A.M.I.C.E. and have had at least five years' design experience since becoming an associate member; should also have a sound knowledge of design in reinforced concrete, steelwork and structural timber, together with an adequate knowledge of current byelaws and codes of practice.

(2) Senior Assistant Architect/Group Leader. Candidates must be architects of some experience, have high ability in design, be capable of taking charge of large contracts and of controlling a group of assistant architects.

(3) Senior Assistant Quantity Surveyor/Group Leader. Candidates must be fully qualified and have considerable experience in the preparation of bills of quantities and specification, interim valuations and settlement of final accounts, for all classes of local authority building work.

Salary for each appointment J.N.C.B. £1,260/£1,485 per annum.

Five day week. Housing accommodation for a limited period may be provided. Removal expenses allowed.

Forms of application from the City Architect, Town Hall, returnable by the 8th July, 1960 1923

---

NANTWICH URBAN DISTRICT COUNCIL
ENGINEER & SURVEYOR'S DEPARTMENT

(*a*) ENGINEERING ASSISTANT, A.P.T. II.

(*b*) ARCHITECTURAL ASSISTANT, A.P.T. II.

Applications are invited for the above appointments on the staff of the Engineer and Surveyor.

Applicants for (*a*) should hold the Intermediate examination of the Institution of Municipal Engineers, and for (*b*) the Intermediate examination of the Royal Institute of British Architects.

The appointments will be terminable by one month's notice on either side and will be subject to the Local Government Superannuation Act and N.J.C. Conditions of Service.

Housing accommodation will be available if required. Applications to be sent to Mr. E. H. Bailey, Engineer and Surveyor, Brookfield House, Nantwich, Cheshire, stating whether married or single, details of training and experience, past and present appointments together with the names of two referees, not later than July 15th, 1960.

Canvassing will disqualify.

D. TUDOR EVANS,
*Clerk of the Council.*

14th June, 1960. 1862

---

LANCASHIRE COUNTY COUNCIL

PLANNING ASSISTANT required at ACCRINGTON, salary within range £610-£1,070 per annum.

Applicants should be studying for or possess a recognized qualification in architecture, surveying, engineering and/or town planning. The commencing salary for the successful candidate will be according to qualifications and experience.

Applications stating age, qualifications, present appointment, experience, etc., and two referees to the County Planning Officer, East Cliff County Offices, Preston, by the 6th July, 1960. 1924

---

STEPNEY M.B.C. require DRAUGHTSMAN AND TRACING ASSISTANT, Male or Female, £650—£805. Forms and other particulars from Town Clerk, 227, Commercial Road, E.1. 1934

---

COUNTY BOROUGH OF EAST HAM
BOROUGH ENGINEER'S DEPARTMENT

Applications are invited for the following temporary appointment:—

SENIOR ASSISTANT ARCHITECT—GRADE IV
£1,065-£1,220

London Weighting is paid in addition, and a salary in excess of the minimum may be paid according to qualifications and experience. The appointment is for work on a new Technical College and is expected to be for a period of not less than 3 years.

Further details and application forms returnable by 8th July, 1960, from the Town Clerk, Town Hall, East Ham, E.6. 1888

---

COUNTY BOROUGH OF ST. HELENS
BOROUGH ENGINEER'S AND SURVEYOR'S DEPARTMENT

Applications are invited for the following appointments in the Architectural Section of the Department:—

(*a*) CHIEF ASSISTANT ARCHITECT, Scale "A" (£1,275-£1,420).

(*b*) PRINCIPAL ASSISTANT ARCHITECT, Grade A.P.T. V (£1,220-£1,375).

Applicants for appointment (*a*) should be Corporate Members of the R.I.B.A. with experience in design and construction of Public Buildings, Redevelopment Schemes and large scale Housing development and with experience also in the control and supervision of staff.

Applicants for appointment (*b*) should be qualified Architects with good experience in general municipal development.

The Council operates a five-day working week.

The appointment will be terminable by one month's notice and will be subject to the Local Government Superannuation Acts, Medical Examination and N.J.C. Conditions of Service.

Applications stating age, qualifications, present and past appointments, and details of experience, giving names of two referees and clearly indicating the appointment applied for must be forwarded to the undersigned not later than Wednesday, 6th July, 1960.

Applicants must reveal relationship to any member or senior officer of the Council. Canvassing will disqualify.

M. WARD,
M.I.Mun.E., M.T.P.I., A.M.I.Struct.E.,
*Borough Engineer and Surveyor.*

Town Hall,
St. Helens. 1898

---

CITY OF LEEDS
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

Post No. 1—CHIEF ASSISTANT HEATING ENGINEER, Grade A.P.T. IV-V, £1,065-£1,375.

Post No. 2.—SENIOR ASSISTANT HEATING ENGINEER, Grade A.P.T. III, £880-£1,065.

Candidates suitably qualified should have had experience in the design of schemes and preparation of specifications for all classes of work including Educational and other Public Buildings.

Applicants must clearly indicate the post for which they wish to be considered.

Medical Examination. Superannuation payable.

Closing date for applications, Saturday 16th July, and these are to be sent to the City Architect, Priestley House, Quarry Hill, Leeds, 9.

Canvassing disqualifies.

J. R. SHERIDAN-SHEDDEN,
*City Architect.*

Priestley House,
Quarry Hill,
Leeds, 9.
14th June, 1960. 1899

BOROUGH OF EALING
CONSTRUCTION OF 8 FLATS, WINDSOR ROAD, W.5.

Forms of Tender obtainable from Borough Surveyor, Town Hall, W.5, upon payment of deposit of £5, returnable on receipt of *bona fide* tender, addressed to Town Clerk, Town Hall, Ealing, W.5. Closing date 9 a.m., 21st July, 1960. 1875

LANCASHIRE COUNTY COUNCIL

PLANNING ASSISTANT required at ST. ANNES, salary within range £610-£1,070 per annum.

Applicants should be studying for or possess a recognized qualification in architecture, surveying, engineering and/or town planning. The commencing salary for the successful candidate will be according to qualifications and experience.

Applications stating age, qualifications, present appointment, experience, etc., and two referees, to the County Planning Officer, East Cliff County Offices, Preston, by the 12th July, 1960. 1925

BOROUGH OF ENFIELD
(Non-County Borough in the County of Middlesex: Population 109,700: Area 12,401 acres)
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the above permanent appointment at a salary in accordance with the Grading of Special Classes of Officers of the National Scheme of Conditions of Service, *i.e.* £785-£1,070 per annum with the addition of "London Weighting" as follows:—
Age 16-20 years, £15; 21-25 years, £25; 26 years and over £40.

Commencing salary will be fixed at a point within the Scale commensurate with qualifications and experience.

Candidates must be Associates of the Royal Institute of British Architects and have had considerable architectural experience including the design and construction of public buildings and new housing estates.

There is a large varied programme of work including the redevelopment of Clearance Areas and other areas scheduled for comprehensive development.

Saturday mornings are normally free of duty.

Application forms, obtainable from Mr. H. D. Peake, M.Sc. (Eng) M.I.C.E., Borough Engineer and Surveyor, "Percy House," 7, Little Park Gardens, Enfield, Middlesex, must be delivered to the undersigned not later than Monday, 11th July, 1960.

CYRIL E. C. R. PLATTEN,
*Town Clerk.*

Public Offices,
Enfield, Middlesex. 1918

YORKSHIRE ELECTRICITY BOARD
No. 4 (LEEDS) SUB-AREA
SENIOR DRAUGHTSMAN (CIVIL)

Applicants should have had a recognised technical training and have had experience in the design and detailing of new buildings and in the conversion of existing buildings.

Experience in the preparation of Bills of Quantities and Estimates is essential and the ability to design simple reinforced concrete and/or steel structures would be an advantage.

Salary—N.J.B. Schedule "D" Grade 5, £790/20/890 per annum.

Applications, giving full details of age, qualifications and experience, together with the names of two referees, should be forwarded to the Manager, No. 4 (Leeds) Sub-Area, Yorkshire Electricity Board, Bramhope, Nr. Leeds, not later than July 8, 1960. 1950

LONDON COUNTY COUNCIL
HAMMERSMITH COLLEGE OF ART AND BUILDING

Required for newly created posts in the department of architecture from September 1, 1960, or as soon thereafter as possible:

(1) SENIOR LECTURER to teach in and be responsible for part-time and evening courses. Some teaching experience desirable. Burnham F.E. salary £1,550 × £50—£1,750.
(2) LECTURER for design and construction with special emphasis on construction materials and service. Burhnam F.E. salary, £1,370—£1,550.
(3) GRADE B ASSISTANT TEACHER for construction and studio instruction. Burnham F.E. salary, £700—£1,150 plus possible additions for approved training and qualification.

Candidates for all posts should be members of the R.I.B.A. and preferably hold degree or diploma of a recognised school.

All posts carry a London allowance of £38 or £51 according to age.

Application forms and further particulars from Secretary at College (FE3a/AJ/1438/6), Lime Grove, W.12, to be returned within 14 days. 1943

## Tenders Invited

*36s. per inch; each additional line, 3s. including forwarding replies 2s. extra*

STEVENAGE URBAN DISTRICT COUNCIL
PROPOSED SWIMMING POOL AT ST. GEORGE'S WAY, STEVENAGE

The Council will shortly be inviting TENDERS for the erection of a covered swimming pool constructed in accordance with A.S.A. standards and including a smaller training pool at St. George's Way, Stevenage, near to the Town Centre.

It is the intention of the Council to invite firm priced tenders on a selected basis and contractors who wish to be considered should forward their names and addresses, to the undersigned, before 11th July, 1960. Contractors will be selected and the Council may add others.

Tender documents will be issued during September, 1960 and work is likely to commence during October or November, 1960.

E. J. BOWERS,
*Clerk of the Council.*

Council Offices,
Orchard Road,
Stevenage.
14th June, 1960. 1853

## Architectural Appointments Vacant

*3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra*

NEW ZEALAND.—COMPETENT ARCHITECTURAL DRAUGHTSMAN is required by a progressive Provincial Architectural firm, with a range of interesting work especially in the Hospital field. A permanent position with rental accommodation available, and a salary range of £800—£1,000 per annum is offered to a suitable applicant. Passage to New Zealand will also be paid. Apply in writing with full personal and professional particulars and references by Air Mail to:—Graeme Laurenson and Associates, Registered Architects, P.O. Box 154, Hawera, New Zealand. 1438

ARCHITECTS with busy practice in Brighton require ASSISTANTS with practical experience for varied work. Salary up to £750 per annum. Five-day week, pension scheme, etc. Box 5848.

ARCHITECTURAL ASSISTANT, about Intermediate standard, required for general practice in North Devon Office. Pension scheme. Box 9744.

ARCHITECTURAL ASSISTANTS required in busy Bloomsbury office with varied practice. Good salary and prospects for suitable applicants. Five-day week. Write giving particulars of age, qualifications, experience, etc., to Box 910, c/o 7, Coptic Street, W.C.1. 8815

LARGE SCALE Development in London and Industrial Buildings in Home Counties, High office blocks and residential flats. Four ASSISTANT ARCHITECTS required. Senior and Intermediate standard. West End Office. Five-day week. Good salaries and bonuses. Box 8085

ASSISTANT ARCHITECTS required by firm with offices in Middlesbrough and Billingham-on-Tees. The work is interesting and of considerable variety. Salary according to experience and ability. Elder and Lester, A/A.R.I.B.A., Grosvenor Buildings, 65, Albert Road, Middlesbrough. 8820

RONALD WARD & PARTNERS have immediate vacancy for ASSISTANT ARCHITECTS with initiative and some experience, for interesting, commercial, industrial and civic projects. Salaries commensurate with ability. Apply, 29, Chesham Place, S.W.1. BELgravia 3361. 5638

LEWIS SOLOMON, KAYE & PARTNERS, rapidly expanding practice require ARCHITECTS and ASSISTANTS with initiative and competence to work on major design projects in the London area. These projects include Comprehensive Development Schemes, Hotels, Schools, Offices, and Luxury Flats. Good salaries according to ability and experience, luncheon vouchers, five-day week, and excellent working conditions. Write 5, Holborn Circus Thavies Inn House, E.C.1, or telephone CITy 8811, quoting SLB in both instances. 7700

£750 - £1,000 — KEEN YOUNG ARCHITECTS WANTED URGENTLY. Senior and Junior Assistants required to work on a variety of interesting contracts, including flats, hospitals, offices, hotels, shops and interiors, etc. Opportunities for modern design and control of contracts. Salaries as above or according to experience. R. Mountford Pigott & Partners, South Kensington. Tel. KENsington 1242. 9543

TWO ASSISTANTS required: one at Intermediate standard and one qualified with some years' office experience, for small busy office. Salary according to experience. Ring LANgham 1732 or write to F. G. Frizzell, A.R.I.B.A., 80, Portland Place, W.1. 8022

MONRO AND PARTNERS require ARCHITECTURAL ASSISTANTS of Intermediate/Final R.I.B.A. standard in their London, Watford, and Glasgow Offices for work on interesting industrial and commercial projects. Salary range £800—£1,000 p.a. Non-contributory Pension Scheme. Five-day week. Apply in writing to 32, Clarendon Road, Watford. 8689

SEELY & PAGET have immediate vacancy in their City office. Standard near Final R.I.B.A. with office experience. Holiday arrangements respected. Salary range £842 × £52 (4)—£1,050 plus luncheon vouchers. Write 41, Cloth Fair, E.C.1, or telephone MET 8511. 9155

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for ARCHITECTS and ASSISTANTS with imagination and designing ability to assist with important new developments in the London area. Apply in confidence to 83, Kingsway, London, W.C.2. (HOL. 4071.) 6429

ARCHITECTURAL ASSISTANT required, with at least two years' office experience. Apply in writing to Thomas Mitchell & Partners, 20, Bedford Square, London, W.C.1. 7283

£1,000/£2,000 p.a. will be paid to experienced competent ARCHITECTS by a private practice in the City of London. The work will be primarily on the drawing board on new and interesting projects of magnitude. A high standard of design and detailing ability is required. Please apply in writing to Box 9360.

ARCHITECTURAL STAFF, all grades, required for interesting work. Good salary, bonus, superannuation scheme. House Purchase Assistance Scheme. Excellent working conditions, five-day week. Please apply, giving details of qualifications, experience and salary required to: George Brown & Partners, A./A.R.I.B.A., F.I.A.S., and Eric Ross, F.R.I.B.A., Equity & Law Building, Baldwin Street, Bristol, 1. 9458

EXPANDING practice with varied work in different parts of the country, require keen and capable Intermediate standard ASSISTANTS. Good salary and prospects for the right men. Holiday commitments honoured. Dalling and Partners, 14, Bloomsbury Square, W.C.1. CHAncery 4725. 9469

ARCHITECTS and ASSISTANT ARCHITECTS required for interesting commercial, industrial and civic projects. Responsibility and initiative encouraged. Five-day week, good salary commensurate with ability and experience. Ronald Ward & Partners, 29, Chesham Place, S.W.1. BELgravia 3361. 9246

BUSY City Firm engaged in industrial and commercial work requires ASSISTANT of Final standard with several years' office experience. Five-day week. Luncheon vouchers. Salary by arrangement. Box 9227.

C. H. ELSOM & PARTNERS require ASSISTANTS for work on theatres, laboratories, shops, stores and town centre redevelopment, etc. Apply 10, Lower Grosvenor Place, S.W.1. VIC. 4304. 9584

ARCHITECTS. SENIOR ARCHITECTURAL ASSISTANTS required immediately for a wide variety of work. Application should be made in writing to Kenneth F. Masson, A.R.I.B.A., Chief Architect, S.C.W.S. Ltd., 76, Morrison Street, Glasgow, C.5. 9677

INTERMEDIATE to Final ASSISTANTS required immediately. Salary according to ability and experience. Theo. H. Birks, 38, Portland Place, London, W.1. LAN. 7236. 9739

BASIL SPENCE & PARTNERS require qualified and experienced ARCHITECTS to fill positions of responsibility on a major building programme. Write to 48, Queen Anne Street, W.1, stating experience and salary required. 9824

BRYAN & NORMAN WESTWOOD & PARTNERS require JUNIOR ASSISTANTS to work in their branch office in London. Please apply to 21, Suffolk Street, S.W.1. Trafalgar 4411. 9914

EXPERIENCED SENIOR ASSISTANT ARCHITECT required in Architect's Department of commercial firm in the West Riding of Yorkshire. Must be prepared to work on projects of varying size, also willing to travel throughout the country. Five-day week, Pension Scheme, canteen facilities. Salary by arrangement according to age and experience. Apply Box 1077.

ARCHITECTURAL ASSISTANT, with practical experience required by private Architect (Canterbury). Apply by letter stating age, experience and salary required to John C. Clague, Chartered Architect, 27, St. George's Place, Canterbury, Kent. 1708

DONALD ROWSWELL urgently requires capable ASSISTANTS of various grades for Croydon office. Salary by agreement. Holiday arrangements honoured. Apply with full details to 5A, Friends Road, Croydon, or telephone CROydon 4080. 1045

ARCHITECTURAL ASSISTANTS required in busy West End office. Varied work, excellent salary and prospects. Apply to Maurice Sanders, F.R.I.B.A., 24, Harley Street, W.1. 1441

SENIOR ASSISTANTS required immediately. Salary by arrangement. Theo. H. Birks, 38, Portland Place, London, W.1. LAN 7236. 1486

APPLICATIONS are invited to fill posts as ASSISTANT ARCHITECTS. Five-day week. Compulsory Superannuation Scheme. Salary range £730—£1,080 per annum according to age and experience. Apply: R. C. Steel, A.R.I.B.A., Chief Architect, C.W.S. Ltd., 99, Leman Street, London, E.1. 1534

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required for Office in Norwich engaged in hospital, domestic, industrial and commercial work. Apply by letter to A. F. Scott and Sons, Architects, 23, Tombland, Norwich. 1616

FAVELL, BELLIS & ASSOCIATES have vacancies in Reading, Wrexham and Ruthin for Junior, Intermediate and Final standard ARCHITECTURAL ASSISTANTS. Apply, with full particulars, to 23, Well Street, Ruthin, North Wales. 1575

GOLLINS, MELVIN, WARD & PARTNERS require a SENIOR ASSISTANT, salary £1,000—£1,200 p.a., interested in the development of University and College projects. Five-day week, quarterly bonuses and pension scheme. Write: 281, Glossop Road, Sheffield, 10, or telephone Sheffield 29922, for an appointment. 1576

ASSISTANTS, ASSISTANTS, ASSISTANTS. Share in the profits (if any). Salaries £500—£1,200 p.a. Stanley R. Nevell & Partners. ABBey 3971. 1605

SOUTHAMPTON.—Senior and Junior ARCHITECTURAL ASSISTANTS required. Apply in writing, stating experience and salary required, to E. M. Galloway & Partners, F./A.R.I.B.A., 10, Portland Street, Southampton. 1634

ARCHITECT required to take charge of old established West Riding practice, to be controlled by architects closely connected but some few miles away. Modern approach essential but need not be uncompromisingly brutalistic. Hope not, but may be necessary to nod at tradition occasionally. Salary and arrangements according to demonstrable ability. In confidence to Box 1626.

ASSISTANT required by busy City office engaged mainly in industrial and commercial work. Five-day week; luncheon vouchers; salary by arrangement. Holiday arrangements will be honoured. Please apply: Eric Firmin & Partners, Thavies Inn House, 5, Holborn Circus, E.C.1. Tel.: CITy 8811. 1623

FARMER AND DARK have vacancies for:—
ASSISTANT ARCHITECTS (minimum five years' Office experience).
JUNIOR ASSISTANTS.
Wide variety of interesting projects both here and abroad: including Schools, Offices, Laboratories, Factories, Power Stations and Military Establishments.
Scope for people with initiative and ability.
Five-day week.
Holiday arrangements honoured and travelling expenses paid to those interviewed.
Please write or telephone:—Romney House, Tufton Street, S.W.1. ABBEY 6311. 1573

WATKINS, GRAY & PARTNERS, 57, Catherine Place, S.W.1, require SENIOR and JUNIOR ASSISTANTS for work on large hospital projects. Excellent opportunities for those seeking first hand experience in this most interesting and rapidly developing field. Luncheon Vouchers and pension scheme in operation. Write giving full particulars. 1524

H. T. CADBURY-BROWN requires SENIOR ASSISTANT to take charge of job from beginning. Salary £1,100—£1,300 according to experience. Telephone MAYfair 6296 or write 17 Clarges Street, London, W.1. 1803

JUNIOR and SENIOR ASSISTANTS required. Five-day week. Excellent prospects. Bernard Gold & Partners, 4/6, Savile Row, W.1. Phone REGent 7551. 1248

THE REED PAPER GROUP has vacancies for ARCHITECTURAL ASSISTANTS of Intermediate to Final R.I.B.A. standard. The posts will be based on Head Office, pleasantly situated in Kent. The Architect's Department is engaged in the design and erection of a variety of buildings including a works training college, research laboratories, offices, canteens, etc. Excellent conditions of service include a non-contributory pension scheme and assistance with house purchase. Written applications should be addressed to: The Group Personnel Officer, Albert E. Reed & Co. Ltd., Group Office Building, Larkfield, nr. Maidstone, Kent, quoting reference AA/AD/25. 1429

ARCHITECTS, qualified, required to work in small design groups on interesting development schemes in Birmingham and other cities throughout the United Kingdom. Good opportunities in an expanding practice with offices in Birmingham and London. Progressive salary scales, incentive bonus scheme, luncheon vouchers, five-day week and three weeks' holiday. Flat accommodation available in Birmingham. Holiday arrangements honoured. J. Seymour Harris & Partners, 3/4, Greenfield Crescent, Birmingham, 15. Tel. Edgbaston 4571. 1791

ARCHITECTURAL ASSISTANTS with some experience required to work in design/construction groups on interesting redevelopment schemes in Birmingham and other cities throughout the United Kingdom. Good opportunities in an expanding practice with offices in Birmingham and London. Progressive salary scales, bonus scheme and holiday in accordance with service, luncheon vouchers, five-day week. Flat accommodation available in Birmingham. Holiday arrangements honoured. J. Seymour Harris & Partners, 3/4, Greenfield Crescent, Birmingham, 15. Tel. Edgbaston 4571. 1792

CHIPPINDALE & EDMONDSON
CHARTERED ARCHITECTS
BRADFORD

INVITE applications for the following vacancies:—
(1) Fully qualified ARCHITECTS with several years' experience to take charge of interesting work of all types.
Salary £900—£1,200.
(2) ASSISTANTS of Intermediate standard capable of preparing working drawings under supervision and taking responsibility for smaller contracts.
Salary £700—£950
Five-day week; Pension Scheme; Luncheon Vouchers (or equivalent); salary renewed annually; travelling expenses paid to applicants who are interviewed.
Replies, endorsed "Staff—Private and Confidential." to Empire House, Piccadilly, Bradford, Yorkshire. 1788

EXCELLENT OPPORTUNITIES exist in busy, medium size firm of Chartered Architects in West End. Vacancies are available in the drawing office and for Assistants who wish to acquire experience in contract supervision and survey work. Qualifications an advantage but not essential. Salary and promotion according to experience and ability to accept responsibility. Please apply to Box 1773.

SENIOR ASSISTANT ARCHITECT aged 27/34 required in new Architects' Dept. of large Building and Civil Engineering organisation (West End Office). Good salary and responsibility in return for ability and initiative. Excellent prospects for right man. Write giving full details to Chief Architect, Box 1777.

ARCHITECTURAL ASSISTANTS with keen interest in good design and new forms of construction required in architects' dept. being set up by expanding Building and Civil Engineering group of companies. London office, five-day week, and Luncheon Vouchers. Write stating age, experience and salary required to Box 1778.

ARCHITECTURAL ASSISTANTS required. Commercial work. Must be experienced and competent. Generous salaries to right men. Five-day week. Apply in first instance by letter giving details experience and qualifications to Lewis & Hickey, F./A.R.I.B.A., 130, Regent Street, London, W.1. 1782

£1,000 per annum experienced INTERMEDIATE ASSISTANT to work on various projects, Supermarkets, Office Buildings, Laboratories and Factories. Holiday respected. Five-day week. Bonus. Phone SLOANE 0833 NOW. 1787

PARKER & ROBERTS, A./A.R.I.B.A., Lincoln and Sleaford, require ASSISTANTS, Final and Intermediate standards, at both offices. Progressive firm with large projects in all fields, including Industrial, Hospital, Motels. 1960 holidays honoured. Car owners preferred. Salaries by arrangement. Write giving details of experience to 47, Silver Street, Lincoln. 1715

LANCHESTER & LODGE urgently require ARCHITECTURAL ASSISTANTS of all grades. Varied and interesting work of all sizes, five-day week and luncheon vouchers. Please write full particulars: 10, Woburn Square, London, W.C.1. 1719

BIRMINGHAM. We need a young ARCHITECT either qualified or in training, with a good sense for clean and straightforward design. There is plenty of scope for the right man. Salary up to £1,000 according to experience. Apply J. Alfred Harper & Son, 63, Temple Row, Birmingham. 1727

EXCELLENT positions are now being offered by Lewis Solomon, Kaye & Partners. All grades are wanted from Intermediate standard to project senior, for work which includes London's newest hotel, a comprehensive development, schools, luxury flats and theatres. Positions are offered in all categories. Salaries offered will depend on individual qualifications or merits. Luncheon vouchers. Five-day week and excellent working conditions. City 8811. 1662

KEEN ARCHITECTURAL ASSISTANT, Intermediate standard, wanted immediately. Only good draughtsman with a sound knowledge of construction and details welcome. Site experience available, as well as drawing office. Five-day week. Details to Felix Walter, F.R.I.B.A., 4, Raymond Buildings, Gray's Inn, W.C.1, or 'phone HOLborn 0535. 1659

EXCELLENT opportunity for Senior and Intermediate ASSISTANTS in a permanent and progressive appointment with Midland firm of Architects who are working on large projects of an advanced type of design, including comprehensive development schemes, multi-storey office buildings, multi-storey flats, shopping centres, schools, banks, public houses and industrial projects. Accommodation provided in Georgian house. Apply Box 1588.

QUALIFIED CHIEF ASSISTANT and JUNIOR required in one of the most delightful Towns in the Country. Applicants should be genuinely interested in a varied Private Practice, the work including Schools, Hospitals, Banks, Shops and Housing. Bonus and Pension Schemes in operation. Salary according to ability. Excellent prospects. Apply in confidence to Messrs. F. J. Lenton & Partners, A/A.R.I.B.A., 16, Broad Street, Stamford, Lincs. 1624

LIVERPOOL. ASSISTANTS required of Intermediate or near Intermediate standard, aged under 30 years. Busy office with happy atmosphere and pleasant working conditions. Considerable hospital work, also industrial, commercial, etc. Never a dull moment. Five-day week and bonus scheme. Good prospects. Salary by arrangement. Apply in writing, giving details of general and professional education, experience, etc., to: R. Norman Jones, A.R.I.B.A., Sheffield Buildings, 89, Victoria Street, Liverpool, 1. 1698

£800—£1,100. ARCHITECTURAL ASSISTANTS. Urgently required for small but busy West End Office. E. Norman Bailey & Partners. Please ring VICtoria 7088 for appointment. 1705

ARCHITECTS AND ASSISTANTS

REQUIRED for work on interesting Industrial Project affording first class design and technical experience.
Apply in writing to:
Sir William Halcrow & Partners,
(B.A. Architects' Section),
47, Park Lane, London, W.1. 1752

LLEWELLYN SMITH & WATERS urgently require ASSISTANTS for their expanding programme of work, which includes Industrial, Commercial, Housing, Schools, Churches, etc.
DESIGNERS wanted, to prepare and develop sketch designs for every type of work. Imaginative outlook and good sense of detail essential. £800—£1,250.

JOB ORGANISERS required to take charge of jobs; able to control drawing office and site work and deal with Consultants and Specialists. £1,000—£1,250.

ASSISTANTS wanted, interested in working on a wide range of projects. Good opportunities for young men of ability. £700—£1,000.

JUNIORS required. Salary according to aptitude and experience.

L.V's; Pension Scheme; holiday commitments for 1960 will be honoured.

Kensington and Worcester. Write 103, Old Brompton Road, S.W.7, or telephone KEN 4477. 1677

YORKSHIRE Architects require competent ASSISTANTS to handle commercial and hospital work. Salaries up to £1,000 depending on experience. Apply: Taylor, Bown & Miller, 8, Victoria Avenue, Harrogate. 1707

LOUIS DE SOISSONS, PEACOCK, HODGES, ROBERTSON & FRASER require competent ASSISTANTS in their Exeter Office. Applicants may be recently qualified, or unqualified with some years good experience. Applications giving details of age, training and experience should be submitted to 12, Baring Crescent, Exeter, as soon as possible. 1709

INTERMEDIATE ASSISTANTS required by busy City Office of Development Company. Salary £750—£1,000. Ring Moorgate 0767 for appointment. 1789

INTERESTING and varied small practice urgently requires SENIOR and JUNIOR ASSISTANTS for high quality work—not industrial. Telephone or write Bird & Tyler, 13, Welbeck Street, London, W.1. Wel. 0882. 1765

ARCHITECTURAL ASSISTANTS. Well-known London and Provincial firm of Architects urgently require a number of Assistant Architects, chiefly for commercial and flat development schemes. Salary up to £1,100 according to ability and experience. Reply Box 1798.

WEST END ARCHITECTS require qualified experienced ASSISTANT for interesting commercial developments in London and Provinces. Genuine prospects for advancement to applicant with ability and initiative. Telephone Langham 9251, or write giving particulars of experience to Newman, Levinson & Partners, 9, Mansfield Street, London, W.1. 1801

QUALIFIED AND UNQUALIFIED ASSISTANT ARCHITECTS required to join groups to work on large buildings and groups of buildings. Keppie, Henderson & Partners, 21, Woodside Place, Glasgow, C.3. 1729

ARCHITECTURAL ASSISTANTS required. Probationer up to Intermediate R.I.B.A. level, or Students R.I.B.A. Facilities given for study of design at London Schools. Hare & Pert, A./A.R.I.B.A., 29, Elm Street, Ipswich. 1751

INTERMEDIATE ASSISTANTS required immediately in congenial busy office. Good draughtsmanship and enthusiasm are first requirements. Salary by arrangement. Ring for appointment AMB 7271. Musman & Cousens, 12, Upper Berkeley Street, W.1. 1758

ALAN W. PIPE & SONS, 8, Queen Street, E.C.4, require qualified or experienced ASSISTANT ARCHITECT also JUNIOR ARCHITECTURAL ASSISTANT. A permanent job in a busy and progressive office, mainly industrial and office buildings. Telephone City 7611 for appointment. 1766

J. M. AUSTIN-SMITH AND PARTNERS require fully qualified ARCHITECTURAL ASSISTANTS with office experience and the ability to design, run and supervise contracts on their own initiative. Salary according to age (limit 35) and experience. Apply in writing to 29, Sackville Street, London, W.1. 1742

J. M. AUSTIN-SMITH AND PARTNERS require qualified ASSISTANTS (maximum age 30) to work in conjunction with senior assistants. Apply in writing giving all relevant details to 29, Sackville Street, London, W.1. 1743

CHIEF ASSISTANT'S position becoming available in about two months' time in Architect's and Surveyor's Office. Salary commencing £850 to £1,000 per annum dependent upon qualifications and experience. Other positions of about Intermediate standard also available. Apply in writing to B. Stevens and Partners, 31, Cornfield Road, Eastbourne. 1744

SENIOR ASSISTANT ARCHITECT required by Devereux and Davies. Good salary to applicant with the requisite ability and experience. 3, Gower Street, Bedford Square, London, W.C.1. 1733

FOLKESTONE practice has vacancies for ARCHITECTURAL ASSISTANTS. Interesting and varied work. Apply stating age, experience and salary required: Kenneth Waite, A.R.I.B.A., 127, Sandgate Road, Folkestone, Kent. Tel.: Folkestone 2134. 1694

SENIOR AND JUNIOR ARCHITECTURAL AND ENGINEERING ASSISTANTS required. Good working conditions, Pension Scheme and expanding opportunities. Apply giving general details with salary required in strict confidence to Gregory Housing Ltd., 21, Farncombe Road, Worthing, Sussex. 1741

ERNÖ GOLDFINGER requires ASSISTANTS with sound knowledge of construction. Expanding programme of work includes office buildings, schools, shops, factories, local authority and private housing. Local Authority Rates. Telephone: HYDe Park 5657. 1738

DIAMOND, REDFERN AND PARTNERS require SENIOR and JUNIOR ASSISTANTS to fill positions in their expanding office. Applicants should want to produce good modern work, which at present includes churches, industrial, commercial, flats, interiors and housing development. Brief details to 92, George Street, W.1, or Hunter 0489. 1732

IF YOU WANT

A CONSTANT and interesting works programme.
Occasional Travel.
Five-day week.
A starting salary of £850 per annum.
Annual Bonus.
Non-contributory Pension Scheme.
A base in Ealing.
A secure job with Resident Architect to a Multiple Co.
A Principal who values experience above qualifications.

THESE ARE OFFERED TO

First Class Senior Assistants.

Apply for appointment.
Box 1767.

WIMPEY

AN expanding programme of work in the Architects' Department offers good opportunities to

ARCHITECTS AND ASSISTANTS

keen to apply their knowledge and ability to progressive design and construction techniques.

The work covers varying types of Industrial, Commercial and Domestic Projects of considerable size and interest.

Permanent appointments, with good salaries, and covering a wide range of experience, are immediately available at Head Office.

Five-day week; pension scheme available for successful applicants wishing to make a career with the Company.

Applicants should write to:—E. V. Collins, A.R.I.B.A., Chief Architect, George Wimpey & Co., Limited, 27, Hammersmith Grove, London, W.6. 1755

SENIOR AND INTERMEDIATE STANDARD ARCHITECTURAL ASSISTANTS required for London and Weston super Mare. Write full particulars including salary required: R. H. Gallannaugh, L.R.I.B.A., 54, Queen Anne Street, London, W.1. 1678

ARCHITECTS AND ASSISTANTS of all grades required urgently in connection with an extensive and varied programme of interesting work including schools, laboratories, general industrial and War Department contracts in various parts of the country. Vacancies exist at both the Derby and London offices. Apply in writing to Morrison and Partners, 103 Belper Road, Derby. Tel. Derby 49287, 8, 9, or London Hunter 1628. 1691

OVE ARUP & PARTNERS. ARCHITECTS. A young and expanding group of Architects working in close association with Engineers on a variety of projects including University, Industrial and Housing work want further ARCHITECTS and ASSISTANTS. Salary according to experience and ability. Please write to 13, Fitzroy Street, W.1. 1692

EXPERIENCED ARCHITECT wanted for small new practice doing quality work. Pleasant office conditions. Must be capable of initiative and responsibility. Good draughtsmanship essential. Salary plus profit share. Full details to R. H. Dolan, A.R.I.B.A., 36, Kenwood Drive, Burwood Park, Walton-on-Thames. 1821

GRAHAM CRUMP & DENIS CRUMP, F./A.R.I.B.A., require ARCHITECTURAL ASSISTANTS in Croydon office. Intermediate standard with several years' office experience. Interesting and varied work. Five-day week. Write giving full particulars, 43, George Street. 1806

GOLLINS, MELVIN, WARD & PARTNERS require ARCHITECTURAL ASSISTANTS for their Sheffield Office to work on interesting University projects. Five-day week, quarterly bonuses and pension scheme. Write: 281, Glossop Road, Sheffield, 10, or telephone Sheffield 29922, for an appointment. 1577

DON'T apply UNLESS bright, energetic, companionable, interested in architecture and capable of getting it built. Age 25-30 preferred. Smallish London office. Box 1871.

ADDITIONAL staff required for Architectural IRONMONGERY, as follows:
ASSISTANT ESTIMATOR
ASSISTANT WAREHOUSEMAN
COUNTER HAND
REPRESENTATIVE
Please apply: A. J. Binns Limited
29 Store Street
W.C.1.
Telephone MUSEUM 5802. 1927

FREEMAN & LOCKYER require immediately for small progressive practice two ASSISTANT ARCHITECTS with experience of commercial and industrial projects. Salary between £800—£1,000. Excellent prospects. Housing may be available. Brief details to:—Old Bank Chambers, High Street, Bracknell, Berks. 1926

BIRKENHEAD BREWERY ARCHITECT'S DEPARTMENT has vacancies for ASSISTANTS either qualified or unqualified, with or without experience of licensed work. Well remunerated, permanent, superannuated positions are offered. Should you have the ability to accelerate the output of our Drawing Office, together with a partiality to ale, apply to Fergus H. Frost, A.R.I.B.A., 73 Oxton Road, Birkenhead. 1900

DEVON country practice, progressive and expanding has vacancy for ASSISTANT. Salary £600—£950 p.a.; also vacation work for students. Apply in writing, giving full details. Antony Lamb, A.R.I.B.A., A.M.T.P.I., 2, Prospect Place, Ottery St. Mary, Devon. 1901

ENFIELD, Middx. Established practice requires ASSISTANT. Interesting and wide range of work including Hospital, Industrial, Commercial, Domestic, etc. Five-day week. Three weeks' annual holiday. Apply in writing giving full details of training, experience and salary required to: E. William Palmer & Partners, Chartered Architects, 8, The Town, Enfield, Middx. 1902

ARCHITECTURAL ASSISTANT or DRAUGHTSMAN—intermediate standard required for Architects Department of Public Company engaged in development of commercial and industrial properties. Salary up to £20 per week. Write or telephone Mr. S. M. Haimes, Town and Commercial Properties Ltd., 25, Grosvenor Street, London, W.1. HYDe Park 3841. 1892

ARE you interested in:—(1) High Standard Design? (2) A good salary with prospects of future advancement? (3) Full responsibility for your own contracts? (4) Working in a West End Architect's Office with good conditions, five-day week and luncheon vouchers? If so, ring HYD 1030 or apply Box No. 1896.

SMALL progressive and contemporary London office with staff of four requires SENIOR ASSISTANT. Good opportunity for person who wishes to gain experience in all aspects of a varied practice. Also very interested in Intermediate to Final ASSISTANT with experience. Good salary to right people. Box 1903.

TROPICAL ARCHITECTURE presents unique problems of design and detailing. We need lively minds, enthusiastic spirits and willing hands to help in evolving first rate solutions. The work of our office with 12 assistants at present is mainly concerned with hospital buildings, housing, private houses, small office blocks, libraries, etc., all in West Africa. Applicants should be qualified or nearly qualified. Some office experience an advantage but ability and willingness to learn more important. Write or phone, WELbeck 2915. William F. Vetter & Kenneth Scott Associates, 81, Wimpole Street, London, W.1. 1904

PETER BAREFOOT requires ASSISTANT for work on offices and housing development; Inter to Final standard. Please write 22, Thorofare, Ipswich. 1905

BRIGHTON AND HOVE

EXPERIENCED ASSISTANTS in all grades required. Details please to:—H. Hubbard Ford & Associates, F/A.R.I.B.A., 51, Church Road, Hove, 3, Sussex. 1906

ARCHITECTS (QUALIFIED) AND ASSISTANTS REQUIRED IN THE SOUTHERN AND MIDLAND DIVISIONS OF A RAPIDLY EXPANDING ORGANISATION USING NEW TECHNIQUES. ABILITY AND ENTERPRISE CONSIDERED MORE IMPORTANT THAN QUALIFICATIONS. SUBSTANTIAL BONUS AND SUPERANNUATION SCHEMES IN OPERATION. EXCELLENT FUTURE PROSPECTS FOR THE RIGHT MEN. REPLIES IN CONFIDENCE TO THE PERSONNEL MANAGER, ATCOST (FACTORIES), LTD., TUNBRIDGE WELLS, KENT. 1907

MELBOURNE, AUSTRALIA. SENIOR ARCHITECT required by leading firm handling large scale university and commercial projects. Salary range £A1,800 to £A2,300. Air passage paid, three-year contract, accommodation assured. Box 1833.

ARCHITECTURAL ASSISTANTS REQUIRED IN SOUTH LONDON

TO work on multi-storey housing schemes and shops. Excellent working conditions in profit-sharing co-partnership office.
Harry Moncrieff, F.R.I.B.A., A.M.T.P.I., Co-operative Planning Ltd., 73b, South Side, S.W.4. TULse Hill 4871.

SALARIES
£750 TO £1,100. 1832

H. A. HALPERN AND ASSOCIATES require STAFF of ability, who consider architecture of paramount importance; to work on major and lesser redevelopment schemes in our Chatham office. Salary commensurate with ability. Intermediate to qualified standard. Apply to 7, Edgware Road, Marble Arch, W.2, or telephone AMBassador 2471/3. 1834

PROGRESSIVE County Town Architects urgently require services of TWO ASSISTANT ARCHITECTS possessing good design and structural ability for educational and housing projects. Appropriate salaries offered. A. R. Dannatt & Son, F./F.R.I.B.A., Chartered Architects, Surveyors, Prudential Buildings, 65a, Duke Street, Chelmsford, Essex. Tel.: Chelmsford 3857. 1535

VINCENT & WYNN of 207, Victoria Street, S.W.1, require a first ASSISTANT of up to Intermediate standard to help two Partners and Secretary in busy office very close to Victoria Station. Tel. TATe Gallery 7598. 1860

ARCHITECTURAL ASSISTANTS required of Senior and Intermediate standard for busy private practice engaged on varied domestic housing, commercial and industrial schemes. Salary according to ability. Apply Walter P. P. Grant, 19, Central Road, Worcester Park, Surrey. Tel.: Derwent 0041. 1857

PROPERTY GROUP requires ARCHITECTS and all grades of architectural staff for West London office. Appointments will be permanent and subject to company's pension scheme. Full particulars of previous experience and salary required to Box 1856.

TRIPE & WAKEHAM, Chartered Architects, require ASSISTANTS with three to five years' office experience for work on interesting projects in their London office. Telephone WELbeck 7744, or write 16, Fitzhardinge Street, W.1, for an appointment. 1852

EXPERIENCED ARCHITECT required to take over the design section of a small Contracting Company. Salary up to £1,400 p.a. for the right man. Write giving full details to P. La Bern, Dip.Arch., Managing Director, N. F. Cheevers Ltd., 250/2, Earls Court Road, London, S.W.5. 1851

ARCHITECTS of Final standard required, five-day week, L.Vs, holiday arrangements honoured. Raglan Squire & Partners, 3, Hobart Place, S.W.1. 1850

CLIFFORD CULPIN requires experienced qualified and "post-Intermediate" ASSISTANTS to work on a wide variety of schemes including luxury flats, an office building, a comprehensive school, London banks, a town hall and a Civic Centre. Opportunities to take responsibility. Paid holiday this year. Phone CHAncery 5395 or write 39, Doughty Street, W.C.1. 1849

ASSISTANTS required, Final or Intermediate standard, upon varied work—industrial, laboratory and commercial, ecclesiastical, agricultural, and domestic works. Apply to C. B. M. Smith, A.R.I.B.A., 4, Bath Road West, Slough, Bucks. 1848

ASSISTANT ARCHITECTS wanted for interesting and varied work with responsibility. Salary according to experience. Write, stating age and experience, to Halliday & Agate, F/A.R.I.B.A., Chartered Architects, 4, Fountain Street, Manchester, 2. 1895

GRAVESEND & ROCHESTER.—Opportunity in expanding Offices—MALE or FEMALE ASSISTANTS required on wide variety of work. Pension Scheme. Salary up to £1,000 p.a. Evening interviews if required. Write or 'phone: George E. Clay & Partners, AA.R.I.B.A., 198, Parrock Street, Gravesend. Tel.: Gravesend 1401/2. 1894

NORTH & PARTNERS, Chartered Architects, Broadway, Maidenhead, require additional ARCHITECTURAL ASSISTANTS for widespread and varied practice. Salary range £750—£1,000 p.a. 1890

ARCHITECTURAL ASSISTANT, Intermediate standard, required to work on interesting and varied projects in the Oldham Office. Apply: Tom Hayes & Co., 10, Clegg Street, Oldham. 1897

ARCHITECTURAL ASSISTANTS. Schweppes Ltd. have a limited number of vacancies in their Head Office Architect's Department for keen, enthusiastic men of Intermediate and Final standard. This is an opportunity for men of the right calibre to work for an expanding Company and its subsidiaries on both new projects and the development of existing buildings, etc. Starting salary range £750 to £1,000 according to ability and experience. Profit sharing and pension schemes, five-day week, staff cafeteria. The department is located in a very modern office block adjacent to Paddington Station. Please write full particulars of experience, qualifications, age, etc., to Miss Lister, Personnel Department, Schweppes Limited, 2, Connaught Place, London, W.2. 1825

ARCHITECTURAL ASSISTANTS required at Shrewsbury, Cardiff, Swansea and Newport. The appointments carry good salaries for suitable applicants. The Newport office is on site at Richard Thomas and Baldwin's Spencer Works, and in this case travel and generous subsistence allowances will be made, and a five-day week is in operation. Existing holiday arrangements will be honoured. Applications, stating age, experience, present salary and choice of office, should be sent to the Secretary, Sir Percy Thomas and Son, 10, Cathedral Road, Cardiff. 1949

BRISTOL. ARCHITECTURAL ASSISTANTS of Intermediate or Final standard required for varied private practice engaged on school, university, hospital and commercial work. Salary according to experience. Eustace Button & Partner, 23, Berkeley Square, Bristol, 8. 1547

FOUR ARCHITECTURAL ASSISTANTS required to work on a number of large schemes. Salary grades ranging from £550 to £1,020. R.I.B.A. Intermediate or Final standard. Five-day week. Pension Scheme after twelve months. Three weeks holiday. Car Allowance. Holiday arrangements honoured. Apply Gordon Payne and Preece, Rockleigh House, London Road, Gloucester. 1545

CLIVE PASCALL & PETER WATSON, 24, Half Moon Street, W.1, require experienced post-Intermediate ASSISTANTS for lively work on commercial and industrial projects. Salary £600—£900. Telephone GRO 7343 for appointment. 1539

ARCHITECTS

TAYLOR WOODROW (BUILDING EXPORTS) LTD. invite applications for the following vacancies:—

ASSISTANT ARCHITECT

Inter/Final Standard with a flair for good design plus some constructional experience.

SENIOR ARCHITECTURAL DRAUGHTSMAN

with first class detailing experience

ARCHITECTURAL DRAUGHTSMAN

with at least two years' office experience.

The work involves a wide variety of traditional and non-traditional projects in the U.K. and overseas. Prospects are excellent for those able to combine responsibility with efficiency.

Please write giving full details of age, experience and salary to

THE OFFICE MANAGER,
41, Welbeck Street, London, W.1.
1921

PROPERTY COMPANY requires ARCHITECT or CHARTERED SURVEYOR to take charge of repair and modernisation programme. Must be experienced Draughtsman and well acquainted with current building costs. Please write giving particulars of experience and salary required to Lamington Properties Ltd., 16, Grenville Place, S.W.7. 1829

BIRMINGHAM Architects, specialising in School and Hospital Design, require ASSISTANT, Intermediate standard. Alternate Saturdays free. Holiday arrangements honoured. Martin & Martin & W. H. Ward, 106, Colmore Row, Birmingham 3. 1863

HAMPSTEAD Architects, one minute Hampstead Underground, require energetic ASSISTANT for position of responsibility. Salary £700 to £1,000 p.a. according to experience. Dinerman, Davison & Hillman. HAM. 1698. 1881

VACANCY for an unqualified ASSISTANT capable of carrying out working drawings, minor site inspections, and surveys. Five-day week. Two weeks holiday with pay. Salary, according to ability and experience, of approximately £550 per annum. Matthews & Son, 91, Gower Street, W.C.1. 1831

IF A YOUNG ARCHITECT of Intermediate standard wishes to gain experience in a bright West End office which is involved in various interesting projects, would he apply to Dalgliesh & Pullen, F., F.R.I.B.A., 23, Old Bond Street, W.1, stating experience and salary required. 1847

ARCHITECT required in Lagos, Nigeria. A.R.I.B.A. with at least three years' post qualification. Experience particularly in contract supervision. Two year tour with three months' leave. Free furnished accommodation for Bachelor. Free return passage. Please apply Box 1919.

SHINGLER & RISDON require THREE ASSISTANTS to assist with the design and construction of important comprehensive developments. Salary £700—£1,000. Holiday commitments recognised. 'Phone CHA. 2951. 1883

ARCHITECTURAL ASSISTANT of Intermediate standard required by rapidly expanding Building and Development Company in South London, engaged on first class housing development, including landscaping, flats, maisonettes, etc. Permanent and pensionable position, with excellent opportunities. Please reply, giving age, full details and salary required, to Chief Architect, Box 1873.

ARE you tired of working in the noise and heat of London? Tired of the journey to and fro each day? We are urgently in need of ARCHITECTURAL ASSISTANTS in the Croydon area. Write giving details of experience, and salary required. Box 1941.

EXPERIENCED ARCHITECTURAL ASSISTANT required for varied and interesting work in private practice. Apply, stating age, qualifications and salary required, to Overton, Massey, Grimsdell & Farley, 38, West Street, Brighton. 1885

ARCHITECTURAL ASSISTANT required. R.I.B.A. Intermediate standard with some office experience. Varied and interesting work. Five-day week. Good salary for keen and competent person. William Crabtree, F.R.I.B.A., 8, Robert Adam Street, W.1. (WELbeck 9909). 1942

HANDISYDE & TAYLOR require ASSISTANTS with some office experience and A.R.I.B.A. or near Finals. Apply in writing, 68, Great Russell Street, W.C.1. 1870

**£900-£1,100**—A private firm of Oxford Architects urgently require a capable DESIGNER to be in charge of a major project. Salary as above, depending on experience and qualifications. JUNIOR ASSISTANTS are also required. It is a friendly and progressive office, conditions are good, and prospects for a keen and conscientious man are excellent. Apply with details, Box 1879.

SENIOR and INTERMEDIATE ASSISTANTS required by Oliver Law & Partners, 35, Ebury Street, S.W.1. 1878

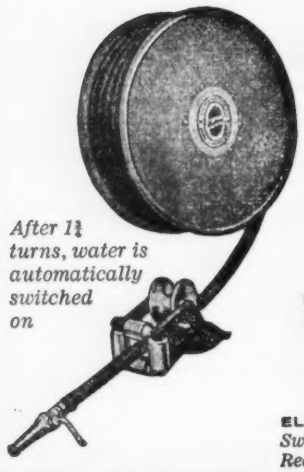
ARCHITECTURAL ASSISTANTS required in the Coventry area, approaching or at Intermediate stage. Interesting development in flat design. Salary up to £1,500 according to ability and experience. Write with full particulars to Box 1872.

ASSISTANTS required by City Architects. Varied practice. Five-day week, 9.30—5.30. Of special interest to those who seek a position offering scope for responsibility, initiative and opportunity for experience in running jobs from conception to completion. Salaries in accordance with ability and up to £1,400 per annum. Kenneth Lindy, Joseph Hill & Partners, 24, St. Mary Axe, E.C.3. 1936

ASSISTANT urgently required, Intermediate to Final standard. Single man preferred willing to work in City or country office in Buckinghamshire. Interesting and varied work with opportunities for site supervision. Salary from £600 plus L.V. G. Gordon Stanham, Adamson, Gray & Partners, 9/10, Fenchurch Street, London, E.C.3. MANsion House 1010 and 5274. 1937

AN ASSISTANT is required in the Architect's Department of Schweppes Limited. This is an opportunity for a keen, qualified architect with an enthusiasm for planning and detail, to work for an expanding company and its subsidiaries on both new projects and the development of existing buildings, etc. Salary according to ability and experience. Profit sharing and pension schemes, five-day week, staff cafeteria. The department is located in a very modern office block adjacent to Paddington Station. Please write full particulars of experience, qualifications, age, etc., to the Architect, Schweppes Limited, 50, Eastbourne Terrace, London, W.2. 1824


IT COULD NOT BE A BETTER PLAN . . .



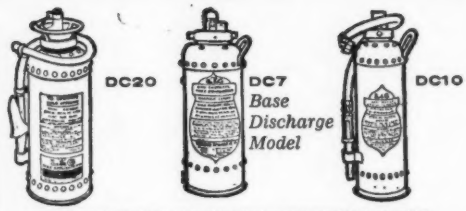
After 1¼ turns, water is automatically switched on

"ON GUARD"

Autoreel

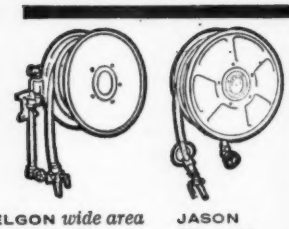
FULLY AUTOMATIC FIRE HOSE REEL

Essential for use in INDUSTRY, HOSPITALS, SCHOOLS, HOTELS, OFFICES, etc.



DC20 DC7 Base Discharge Model DC10

L & G DRY CHEMICAL EXTINGUISHERS



ELGON wide area Swinging Hose Reel

JASON First Aid Hose Reel



17/5 Water CO²

Send for literature and full data of the L & G "Autoreel" and the comprehensive range of L & G Fire Protection appliances. We will be pleased to co-operate and blend our equipment to individual designs and colour schemes. Our Representatives are always available for discussion and advice on the type of Fire appliance installation to suit your particular problem.

—SPECIFY L&G FIRE PROTECTION!

L&G FIRE APPLIANCE CO. LTD.
Caxton Street North · London · E16
ALBert Dock 3991/4
BRANCHES THROUGHOUT GREAT BRITAIN

SEND FOR DATA & FULL DETAILS

SCHOOL TRAINED ASSISTANTS required to take charge of variety of industrial and educational projects. Good opportunities for experience and responsibility without interference. Congenial Liverpool office. Salary £1,000—£1,500, according to experience. W. & J. B. Ellis, F/A.R.I.B.A., 26, Rodney Street, Liverpool, 1. Tel.: ROYal 4814. 1876

CADBURY BROS. LTD.
require an
ARCHITECTURAL ASSISTANT of Final and Intermediate R.I.B.A. standard, to work on a varied and interesting programme. Experience in industrial and commercial building design desirable. Five-day week, attractive working conditions and amenities, pension scheme. Housing accommodation will be provided. Salary according to qualifications and experience.
Write, stating age, qualifications, experience and salary required, to Chief Architect, Cadbury Brothers Ltd., Bournville, Birmingham. 1946

ARCHITECTURAL ASSISTANTS required by busy Architect's Dept. of large multiple firm. Applicants should be experienced in preparation of working drawings and details. Good salary and prospects to suitable applicants. Five-day week. Pension Scheme and canteen facilities. Apply Box 1947.

F. W. WOOLWORTH AND CO. LIMITED
ARCHITECT'S DEPT.
KING STREET, DUDLEY
WORCS.
REQUIRE ASSISTANTS of Final standard in their Architect's Dept. for interesting development programme in multiple stores. Applicants must have previous experience in preparation of working drawings and details.
Starting salary depending on qualifications and experience.
The positions are permanent and pensionable. Good working conditions. Five-day week. Canteen facilities. 1948

WANTED.....Architects
QUANTITY.....Six
STANDARD.....Inter or Final
SALARY.....By arrangement
WORK.....Various
COMMENCING.....Immediately
WRITE.....A. M. Gear & Associates, 12, Manchester Square, W.1. 1922

## Architectural Appointments Wanted

*3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra*

A.R.I.B.A. (32), seven years' experience, requires appointment where drive, energy and ability required. Consider anything. Present salary £1,400 plus car allowance. Box 1606.

EDUCATED BACHELOR, A.R.I.B.A., 30 years of age, seeks responsible position, abroad or travelling preferred. Six years' previous experience London and overseas. Car owner and at present employed in London. Box 1928.

FIRST CLASS ARCHITECTURAL ASSISTANT, 22 years' happy professional all-round experience, seeks interesting job. Box 1680.

ARCHITECT is willing to take on surplus work from over-worked under-staffed colleague. Would assume full responsibility design, working-drawings, etc., act as consultant and supervise. Box 1896.

GHOST ARCHITECT for hire, £1,600 o.n.o., and prospects, or about one third fees permanently. Box 1915.

BRITISH-TRAINED ARCHITECT with 20 years' experience in the U.S.A. seeks association with developers on "all-in" basis as consultant on design, site planning, landscape, etc. Box 1827.

LADY ASSISTANT, Intermediate Standard, five years' office experience on shops and office projects, seeks more varied work in medium-sized London office. Box 1914.

ASSOCIATE, 43, with "One-man practice," commercial and domestic, seeks senior appointment in small or medium-sized office. £1,500 p.a. Box 1916.

## Other Appointments Vacant

*3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra.*

SECRETARY (part or full time): required in a small recently established architect's office in New Bond Street area. Salary between £450 and £750 according to experience. HYD 2120. 1802

ADELAIDE, AUSTRALIA. YOUNG DRAUGHTSMEN interested in emigrating to Australia and to participate in the interior designing and building of David Jones' New Store, are invited to apply in writing to London Manager, David Jones Ltd., 315, Regent Street, London, W.1. 1861

WESTMINSTER BANK LIMITED has vacancies for JUNIOR ARCHITECTURAL DRAUGHTSMAN in its Architect's Office in London. Commencing salary £615 to £700. Write, giving full particulars, to The Architect, Westminster Bank Limited, Post Office Court, 10, Lombard Street, London, E.C.3. 1935

THE BUILDING CENTRE is expanding its information service and requires three additional information officers. A good working knowledge of building materials and equipment is desirable but not essential. Write giving age and experience and salary required to The Chief Technical Officer, The Building Centre, 26, Store Street, London, W.C.1. 1630

BUILDING DRAUGHTSMAN with good knowledge of construction, some office experience and education to Higher National Certificate level. Excellent opportunity to broaden experience and gain added responsibility. Five-day week. Staff superannuation and life assurance scheme. Write, stating age, experience and salary required, to Christopher Higgins, Personnel Manager, Granada Theatres Limited, 149, Regent Street, London, W.1. 1884

SHOP FITTING DRAUGHTSMAN required for preparation of lay-outs for new Super-Markets. Varied and interesting work. Five-day week. Staff canteen. Apply in writing to Cooper & Co's Stores, 90-102, Edgware Road, London, W.2, for the attention of Mr. E. M. West, giving details of experience. Salary about £850 per annum, depending on experience. 1939

DRAUGHTSMEN, ARCHITECTURAL, required in the Architect's Department of Richard Costain Limited. Interesting work on large fast moving contracts including site visits. Good salaries with regular reviews. Pension scheme. Hours 9—5.30, no Saturdays. London Offices near Waterloo Station. Staff canteen and Social Club. Please write, stating age and experience, to: Personnel Officer, 111, Westminster Bridge Road, London, S.E.1. 1932

SECRETARY required. Able to work on own initiative and organize secretarial service in busy architect's office. Shorthand-typist bookkeeper and all round office practice. Telephone HYDE 5657. 1945

JUNIOR DRAUGHTSMAN. Required in Building Design & Survey Section of Rogers, Chapman & Thomas, 125, Gloucester Road, S.W.7. Surveys, ⅛ in. and ½ in. details. Reply stating age and experience. 1859

## Services Offered

*3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra.*

"DON" ARCHITECTURAL MODEL MAKERS. We offer the highest grade work with speed and reliability. —Please 'Phone Woolwich 1262 or write 6, Pelham Crescent, Hastings. 1673

SURVEYS. Large or small, drawn to large scales, accuracy guaranteed. Structural sewerage, sewage disposal, sanitary plumbing and drainage design. The Site Survey Company, London, S.E.3. Telephone LEE Green 7444. 6088

"NAPIER -MODELS." Specialists in Architectural work. Stanley Studios, S.W.10. FLAxman 2118. 1891

MODELS FOR ARCHITECTS. Charles Longbotham specialises in this work and offers first class personal service to architects in the London area. Northcroft Studio, Northcroft Road, West Ealing, W.13. Phone Ealing 7349. 1436

FULLY experienced in all Building and Architectural work, I am available to undertake: Designs, Working Drawings, Details, Surveys, Specifications, Models, etc. Just telephone Wallington 9883 (near Croydon) and I will call anywhere atnd take your instructions. Box 6548

ARCHITECTURAL MODELS.—Tomas E. Bartlett and Partners specialise in this work. 5 King's Ave., W.5. Phone Perivale 6283 6176

SURVEY OF LAND or buildings also Specifications, quantities and final accounts prepared for new or conversion work. LIV. 2356.

ARCHITECTURAL GROUP available for Architectural design and detailing and land, building and quantity surveying. Tel. Wallington (Nr. Croydon) 3712. 9684

SMALL office undertakes ghosting for larger firms. Welbeck 4774. 1917

ARCHITECTURAL ASSISTANTS capable and experienced would like to assist overworked architect with surveys, sketch plans and working drawings. Surveys undertaken in Scotland only. Box 1920.

COMPREHENSIVE ARCHITECTURAL SERVICES, including measured surveys, offered by experienced London Architect. Tel. AMBassador 4641. 1877

## For Sale and Wanted

*3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra.*

FINE OAK STAIRCASE for sale, perfect order. Sixteen treads to landing at 8 feet, 16 treads on including three winders. Treads 42 in. × 11 in. Risers 6 in. £150. Stansell, Mount Ebford, Topsham, near Exeter. 1537

## Partnership and Financial

*3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra.*

YORKSHIRE Partnership or Practice wanted by Architect experienced in private practice who has capital available to purchase. Box 1330.

ASSOCIATE, 40, Dip.Arch. Municipal Architect, Kenya, seeks partnership S. England. Capital available. Box 1846.

TO BUILDERS, ARCHITECTS, DEVELOPERS AND SURVEYORS

**We are instructed to acquire for clients with a quarter million pounds available for permanent investment anywhere in London or provinces**

**PARADES OF SHOPS or OFFICE BUILDINGS UNDER CONSTRUCTION and SHOP SITES**

**Developments taken over in any stage of construction and agreed value of land and works (if any) so far undertaken will be paid immediately with balance against certificates, or building contracts would be taken over so that Vendor has no further financial obligation in either event**

AGENTS AND ARCHITECTS WILL BE RETAINED

Particulars and Plans to Retained Agents:

**NORMAN HIRSHFIELD & PARTNERS**
85, GEORGE STREET, W.1 (WEL. 9145, 5 lines)
WHO WILL IMMEDIATELY INSPECT ALL PROPOSITIONS

**PROGRESSIVE DEVELOPMENT COMPANY**

offers opportunity to one or more assistants on permanent staff, salary, car allowance, expenses and bonus. Must have some knowledge of negotiations, development control and site finding for residential or commercial projects. Activities mainly in the Home Counties based upon our London, S.W.1, office. Whilst our preference is for experienced staff, training can be given to suitable applicants. *Write stating all details, age, salary range required, etc., to*

**WELLWOOD ESTATES LTD.**
**2 SLOANE GARDENS, S.W.1**

BROUGHTON MOOR

LIGHT SEA GREEN OLIVE GREEN AND BLUE

SLATE

for Facings, Foundation Stones, Paving and Flooring, Steps, Cills, Shop Fronts, Surrounds, Pilasters, Fireplaces and all architectural work.

Send for technical pamphlets | 1. Floorings 2. Facings 3. Coping 4. Cills 5. Riven Faced Slabs

The BROUGHTON MOOR GREEN SLATE QUARRIES Ltd

CONISTON · LANCASHIRE

Telephone: Coniston 225/6 Telegrams: Cann, Coniston

MODELS

for Architects & Civil Engineers

by John B. Thorp

EST 1883

98 GRAY'S INN ROAD, LONDON, W.C.1. Tel: HOLborn 1011

KIRKSTONE

GREEN SLATE FOR WALL CLADDING, CILLS, COPING, FLOORING, PAVING, ETC.

The slate from our quarries has been used for these purposes for over 50 years. Our accumulated experience is offered to Architects in the services of our Technical Staff and illustrated literature.

Service in Slate

KIRKSTONE GREEN SLATE QUARRIES Ltd.

Ambleside, Westmorland

Tel.: Amb. 3270


ARCHITECT (fully qualified and British-trained) with 20 years' experience in the U.S.A. seeks associate with established practice view partnership. Capital available. Box 1828.

## Premises To Let

3s. *per line; minimum* 12s. *Box Number, including forwarding replies,* 2s. *extra.*

PROFESSIONAL OFFICES in central Manchester. Suite of eight good rooms with excellent light for immediate occupation. Other suites in preparation. Apply to A. H. Kelly, 28, Oxford Street, Manchester, 1. CENtral 0718. 1912

## Miscellaneous

3s. *per line; minimum* 12s. *Box Number, including forwarding replies,* 2s. *extra.*

HANDMADE, CLAY TILES available in many beautiful colours. The perfect roofing material with the longest life. Particulars, samples and brochure from G. Tucker & Son, Ltd., Loughborough, Leicestershire. Phones: Loughborough 2446/7 1609

A. J. BINNS, LTD., Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment.—Harvest Works, 96/107, St. Paul's Road, N.1. Canonbury 2661.

CROGGON & CO., LTD.—Chain Link Fencing and all types of Wrought Iron Fencing supplied and erected.—230, Upper Thames Street, London, E.C.4. CENtral 4382. 9429

REFRIGERATED SHELVES for bottle cooling; beer and wine coolers, etc., for hotel, catering and licensed Trades, supplied and installed. G.V.E. Ltd., 231, Strand, W.C.2. FLE. 5947. 7651

CONFIDENTIAL consideration of Architects' own development propositions extended by a Development Company who do not employ its own architectural staff. Schemes in London and South-East for housing estates and two- to four-storey flats particularly welcomed. Also multi-storey flats in exceptional positions and shop and office developments. Joint participation arranged with existing clients or schemes taken over and Architects retained. Write or telephone for appointment: Wellwood Estates, Ref. P.D., 2, Sloane Gardens, S.W.1. Telephone SLOane 9178. 1081

## Educational Announcements

3s. *per line; minimum* 12s. *Box Number, including forwarding replies,* 2s. *extra.*

R.I.B.A. and T.P.I. EXAMS.—Stuart Stanley (Ex. Tutor Sch. of Arch. Lon. Univ.), and G. A. Crockett, M.A./B.A., F./F.R.I.B.A., M./A.M.T.P.I., prepare Students by correspondence. 10, Adelaide Street, Strand, W.C.2. TEM. 1683/4. 9953


FULL OR SUPPLEMENTARY TUITION

Provided by correspondence for R.I.B.A. examinations. Revision Courses also available in any subject. Descriptive brochure on application.

ELLIS SCHOOL OF ARCHITECTURE

Principal: A. B. Waters, F.R.I.B.A., F.I.Arb.

103B, Old Brompton Rd., London, S.W.7 and at Albany House, Worcester.

BROAD-ACHESON

BLOCKS for unvarying quality

ALL PRODUCTION UNDER LABORATORY CONTROL

BROAD & CO. LTD., PADDINGTON, W.2

today's slate

WINCILATE

A NATURAL MATERIAL WITH A BIG PLACE IN MODERN ARCHITECTURE

W specialist manufacturers of slate cills, surrounds, copings and cladding to architects' specifications

The Bow Slate & Enamel Co. Ltd

The Town Hall, Bow Rd, E3. ADV 2203

PATENT COMPOSITE STEEL-&-ASBESTOS

FIRE RESISTING DOORS

TO F.O.C. SPECIFICATIONS



- DURACHECK and FIREMAN Doors to F.O.C. 2-hour ratings.
- Fireproof sub-division of storage space.
- Cladding to spray booths, etc.

*Send for date to manufacturers—*

DURASTEEL LTD.

OLDFIELD LANE, GREENFORD, MIDDX

TEL. WAXLOW 1051/2!

*Suppliers to British Railways, Kodak Ltd., Rolls-Royce Ltd., I.C.I. Ltd., and prominent firms in the Paint & Chemical Industry.*

HY-RIB

combined shuttering and reinforcement

long span metal lathing

HY-RIB DIVISION Truscon Limited 35-41 Lower Marsh, London SE1 Telephone: WATerloo 6922

FURSE LIGHTNING CONDUCTORS AND EARTHING EQUIPMENT SUPPLIED ONLY OR SUPPLIED AND ERECTED

SUPPLIED FOR EVERYCLASS OF BUILDING OR STRUCTURE & EARTHING REQUIREMENT

W. J. FURSE & CO. LTD.

14, TRAFFIC STREET, NOTTINGHAM.

LONDON: 22 ALIE STREET, ALDGATE, E.1

ALSO MANCHESTER, BIRMINGHAM, BRISTOL – SEE TEL. DIRECTORIES

BRITISH HOME STORES MIDDLESBROUGH

G. W. Clarke Esq. L.R.I.B.A. Chief Architect.

HATHERNWARE

Send for details to:- Hathernware Ltd. Dept. AJ Loughborough, Leics. Tel. 273.

Constructional Faience blockwork cornices and window surrounds, also Faience Slabs to ground floor and over entrances.

FIRST FOLD HERE

## AJ enquiry service

If you require catalogues and further information on building products and services referred to in the advertisements appearing in this issue of the Architects' Journal please mark with a tick the relevant names given in the index to advertisers overleaf. Then detach this page, write in block letters, or type, your name, profession or trade and address in the space overleaf, fold the page so that the post-paid address is on the outside and despatch. We will ensure that your request reaches the advertisers concerned.

FOLD HERE

Postage will be paid by Licensee

No Postage Stamp necessary if posted in Great Britain or Northern Ireland

BUSINESS REPLY FOLDER
Licence No. S.W. 1761

THE ARCHITECTS' JOURNAL

9-13 Queen Anne's Gate

London, S.W.1.

FOLD HERE

TUCK IN THIS END

# Alphabetical index to advertisers


| | PAGE | CODE |
|---|---|---|
| Accrington Brick Tile Co., Ltd., The | 123 | 0003 |
| Acme Flooring & Paving Co. (1904), Ltd. | 2 | 0004 |
| Aidas Electric, Ltd. | 74 | 0009 |
| Airscrew Co. & Jicwood, Ltd., The | 10 | 0011 |
| Ajax Aluminium, Ltd. | 120 | 0012 |
| Allied Ironfounders Ltd. | 76 | 1049 |
| Antiference Installations, Ltd. | 119 | 1032 |
| Armstrong Cork, Ltd. | 77 | 0027 |
| Association of Vermiculite Exfoliators | 82 | 0144 |
| B.B. Chemicals Co., Ltd., The | 28, 29, 94 | 0055 |
| Bartrev Board Ltd. | 20, 21 | 1035 |
| Batley, Ernest, Ltd. | 135 | 0052 |
| Bayliss, Jones & Bayliss, Ltd. | 58 | 0054 |
| Bilston Foundries, Ltd. | 83 | 0067 |
| Birmingham & Blackburn Constrn. Co., Ltd. | 114 | 0069 |
| Bow Slate & Enamel Co., Ltd.,The | 132 | 0083 |
| Briggs, William, & Sons, Ltd. | 78 | 0088 |
| British Industrial Engineering Co., Ltd. | 45 | 0096 |
| British Plaster Board (Manuf.), Ltd., The | 35 | 0102 |
| British Plimber, Ltd. | 18 | 0712 |
| British Sanitary Fireclay Assoc. | 75 | 0177 |
| Broad & Co., Ltd. | 132 | 0111 |
| Broads Manuf. Co., Ltd. | 112 | 0112 |
| Broughton Moor Green Slate Quarries, Ltd., The | 132 | 0115 |
| Burn Brothers (London), Ltd. | 119 | 0122 |
| CIBA (A.R.L.), Ltd. | 56 | 0736 |
| Clark, James, & Eaton, Ltd. | 39 | 0145 |
| Cole, E. K., Ltd. | 115 | 0823 |
| Colt Ventilation, Ltd. | 3 | 0152 |
| Compactom, Ltd. | 8 | 0153 |
| Conran Furniture | 109 | 0884 |
| Corrie, J. B. (Flextella), Ltd. | 109 | 0228 |
| Costain Concrete Co., Ltd. | 84 | 1100 |
| Curran, Edward, Engineering, Ltd. | 22 | 0714 |
| Doulton Vitrified Pipes, Ltd. | 111 | 0186 |
| Durasteel, Ltd. | 132 | 0194 |
| Duresco Products, Ltd. | 72 | 0195 |
| Ellis School of Architecture | 132 | 0202 |
| English Electric Co., Ltd., The | 15 | 0206 |
| Expandite, Ltd. | 53 | 0212 |
| FEB (Great Britain), Ltd. | 5 | 0216 |
| Falk, Stadelmann & Co., Ltd. | 96 | 0193 |
| Ferodo, Ltd. | 65 | 0218 |
| Flexpipe, Ltd. | 93 | 0926 |
| Flintkote Co., Ltd., The | 17 | 0229 |
| Formica, Ltd. | 33 | 0233 |
| Furse, W. J., & Co., Ltd. | 132 | 0241 |
| Gas Council, The | 54, 55 | 0246 |
| Gay, R., & Co., | 30 | 0243 |
| General Electric Co., Ltd., The | 48 | 0924 |
| Glass Benders Association | 52 | 1033 |
| Gliksten, J. & Son, Ltd. | 110 | 0255 |
| Greenwood & Airvac Ventilating Co., Ltd. | 25 | 0263 |
| Gush & Dent | 119 | 0975 |
| Harris & Sheldon Electrical Ltd. | 95 | 0028 |
| Hathenware, Ltd. | 132 | 0691 |
| Haunchwood Brick & Tile Co., Ltd. | 97 | 0825 |
| Heatrae, Ltd. | 92 | 0287 |
| Hill, E. Aldam & Co., Ltd. | 98 | 0294 |
| Hills, F., & Sons, Ltd. | 79 | 1001 |
| Hills (West Bromwich), Ltd. | 100 | 0297 |
| Hirshfield, Norman | 131 | — |
| Hornitex (Plastics), Ltd. | 99 | 0847 |
| Horsley, Smith & Co. | 23 | 0311 |
| Humasco, Ltd. | 16 | 0941 |
| Imperial Chemicals Industries | 101 | 0319 |
| Industrial Engineering, Ltd. | 26 | 0322 |
| Intermit, Ltd. (Birfield Group) | 110 | 0936 |
| Janitor Boilers, Ltd. | 108 | 0118 |
| Jayanbee Joinery, Ltd. | 63 | 1043 |
| Kerner Greenwood & Co., Ltd. | 85 | 0339 |
| King, W. George, Ltd. | 102 | 0342 |
| King, J. A., & Co., Ltd. | 60 | 0343 |
| Kirkstone Green Slate Quarries, Ltd. | 132 | 0739 |
| L & G Fire Appliance Co., Ltd. | 130 | 0932 |
| Lead Development Assoc. | 113 | 0709 |
| Leaderflush (Doors), Ltd. | 67 | 0347 |
| Lilleshall Co., Ltd., The | 111 | 0910 |
| Lumitron, Ltd. | 68 | 1005 |
| M.K. Electric, Ltd. | 4 | 0416 |
| Mallinson, William, & Sons, Ltd. | 86 | 0379 |
| Marley Concrete, Ltd. | 123 | 0388 |
| Marley Concrete, Ltd., Clear Span | 61 | 0385 |
| Marley Tile Co., Ltd. (Marleycel) | 89 | 0392 |
| Mellor Bromley Air Conditioning | 116 | 0405 |
| Mellowes & Co., Ltd. | 6 | 0406 |
| Merchant Adventurers, Ltd. | 27 | 0407 |
| Merchant Trading Co., Ltd. | 114 | 0408 |
| Minnesota Mining & Manuf. Co., Ltd. | 87 | 0414 |
| National Salt Glazed Pipe Mfrs. Association | 46, 47 | 1034 |
| Newalls Insulation Co., Ltd. | 69 | 0433 |
| Newman, William, & Sons, Ltd. | 31 | 0435 |
| Newton Chambers & Co., Ltd. | 64 | 0437 |
| Northern Aluminium Co., Ltd. | 50, 51 | 0441 |
| Olsson, Martin (Fibreboards), Ltd. | 7 | 0446 |
| Olsson, Martin (L. W. Board) | 71 | 0445 |
| Parmiter, Hope & Sugden, Ltd. | 2 | 0453 |
| Patent Glazing Conference | 88 | 1069 |
| Peacock & Buchan, Ltd. | 114 | 0761 |
| Philips Electrical, Ltd. | 73 | 0462 |
| Phoenix Rubber Co., The | 66 | 0463 |
| Pilkington Brothers, Ltd. (Glass Cladding) | 36 | 0472 |
| Pickerings, Ltd. | 62 | — |
| Plyglass, Ltd. | 9 | 0479 |
| Powell Duffryn Modulair, Ltd. | 57 | 0913 |
| Prodorite, Ltd. (Eagle Works) | 113 | 0489 |
| Pullin, R. B., Ltd. | 117 | 0974 |
| Pyrok, Ltd. | 120 | 0741 |
| Quickset Water Sealers, Ltd. | 115 | 0795 |
| Radiation Group Sales (Water Heater) Ltd. | 40 | 0469 |
| Radiation Group Sales (Solid Fuel) | 59 | 0495 |
| Rank Precision Industries, Ltd. | 70 | 0723 |
| Rawlings Bros., Ltd. | 118 | 0499 |
| Rawlplug Co., Ltd., The | 37 | 0500 |
| Reed, Millican & Co., Ltd. | 81 | 0502 |
| Roller Shutters, Ltd. | 66 | 0517 |
| Rubery Owen (Heating), Ltd. | 44 | 0522 |
| Savage & Parsons, Ltd. | 42 | 0539 |
| Selection Construction Co., Ltd. | 19 | 0547 |
| Shawell, Edwin & Sons, Ltd. | 112 | 0928 |
| Shell Chemical Co., Ltd. | 41 | 0964 |
| Shepley Booth & Associates, Ltd. | 107 | 1059 |
| Shires & Co. (London), Ltd. | 14 | 0554 |
| Shoreditch Borough Council | 123 | — |
| Siemens Edison Swan, Ltd. | 38 | 0557 |
| Sommerfelds, Ltd. | 116 | 0576 |
| Steel Radiators, Ltd. | 12, 13 | 0589 |
| Sterdy Telephones, Ltd. | 107 | 0763 |
| Stewart & Gray, Ltd. | 11 | 0600 |
| Stott, James (Oldham), Ltd. | 91 | 0602 |
| Strand Electric & Engineering Co., Ltd., The | 108 | 0764 |
| Swiftplan, Ltd. | 24 | 0613 |
| Taylor Woodrow | 123 | — |
| Thermacoust, Ltd. | 117 | 0629 |
| Thermadore (Great Britain) | 121 | 0755 |
| Thompson, John (Beacon Windows), Ltd. | 105 | 0631 |
| Thorp, John B. | 132 | 0633 |
| Timber Fireproofing Co., Ltd. | 68 | 0636 |
| Tomo Trading Co., Ltd. | 49 | 0637 |
| Troughton & Young, Ltd. | 90 | 0640 |
| True Flue, Ltd. | 118 | 0641 |
| Truscon, Ltd. | 132 | 0645 |
| Tucker, G., & Sons, Ltd. | 121 | 0646 |
| Universal Asbestos Manfg. Plastics Ltd. | 80 | 0653 |
| Venesta Plywood, Ltd. | 34 | 0656 |
| Wall Paper Manufacturers, Ltd., The | 103 | 0671 |
| Walpamur Co., Ltd. | 104 | 0048 |
| Ward & Co. (Letter), Ltd. | 123 | 0676 |
| Wareing Brothers & Co., Ltd. | 106 | 0679 |
| Weatherfoil Heating Systems, Ltd. | 43 | 0685 |
| Webb, John, & Co., Ltd. | 106 | 1046 |
| Weil, Joseph, & Son, Ltd. | 32 | 1021 |
| Wellwood | 131 | — |
| Zinc Alloy Rustproofing Co., Ltd., | 135 | 0706 |


For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Education, Legal Notices, Miscellaneous, Property and Land Sales, see 122, 124, 125, 126, 127, 128, 129, 130, 131, 132.

**Write in block letters or type, your name, profession and address below, and fold so that the post-paid address is on the outside.**

NAME _____

PROFESSION _____

ADDRESS _____

_____

23.6.60

ODE

0472

0479
0913
0489
0974
0741

0795

0469

0495
0723
0499
0500
0502
0517
0522

0539
0547
0928
0964
1059
0554

0557
0576
0589
0763
0600
0602

0764
0613

0629
0755

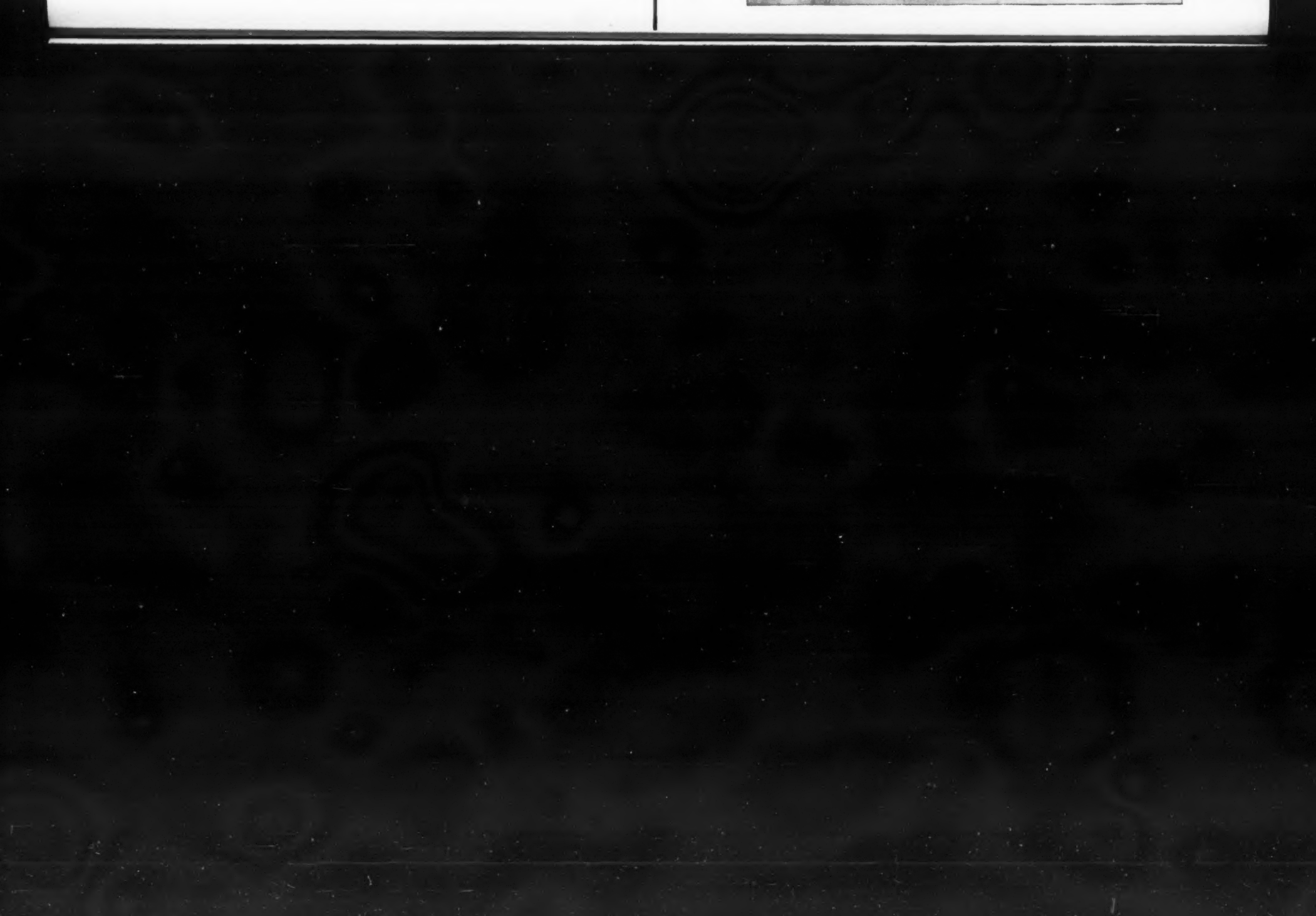
0631
0633
0636
0637
0640
0641
0645
0646

0653

0656

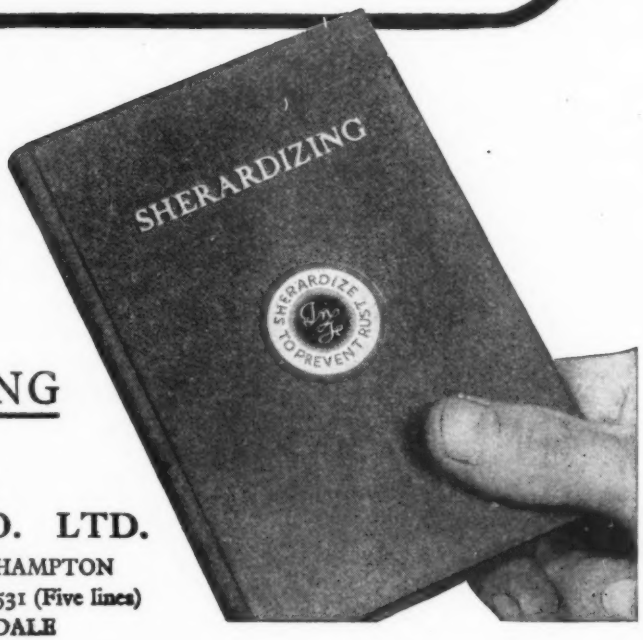
0671
0048
0676
0679
0685
1046
1021

0706



# YOURS *for the Asking*

This book shows that maintenance considerations for the after-treament or prevention of rust need not arise, where Sherardizing is specified. May we send you a copy together with a reprint of the Architects' Journal Information Sheet, reference Corrosion prevention 40 B1?

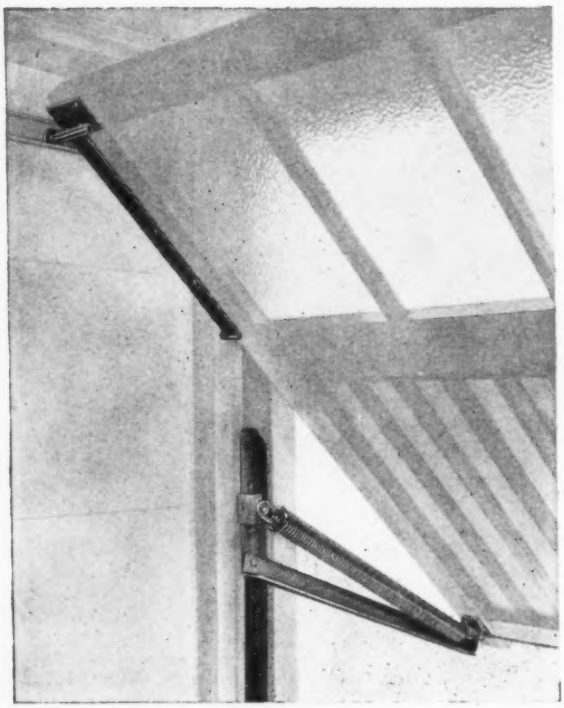



SHERARDIZING

ZINC ALLOY
RUST-PROOFING CO. LTD.
SHAKESPEARE STREET, WOLVERHAMPTON
TELEPHONE: WOLVERHAMPTON 27531 (Five lines)
ALSO AT LONDON & ROCHDALE

# IT'S HARDLY SURPRISING...

## that more and more Architects and Builders are specifying the



BATLEY

Suparise

SPRING CONTROLLED

## UP & OVER DOOR GEAR

**because they know** that Suparise is exceptionally robust, reliable and easy to fit. Available for new installations, with a choice of Aluminium Alloy or selected Timber Doors; or for converting existing hinged doors to 'Up & Over' Doors.

**PRICE £11.10.0.** (Gear only).

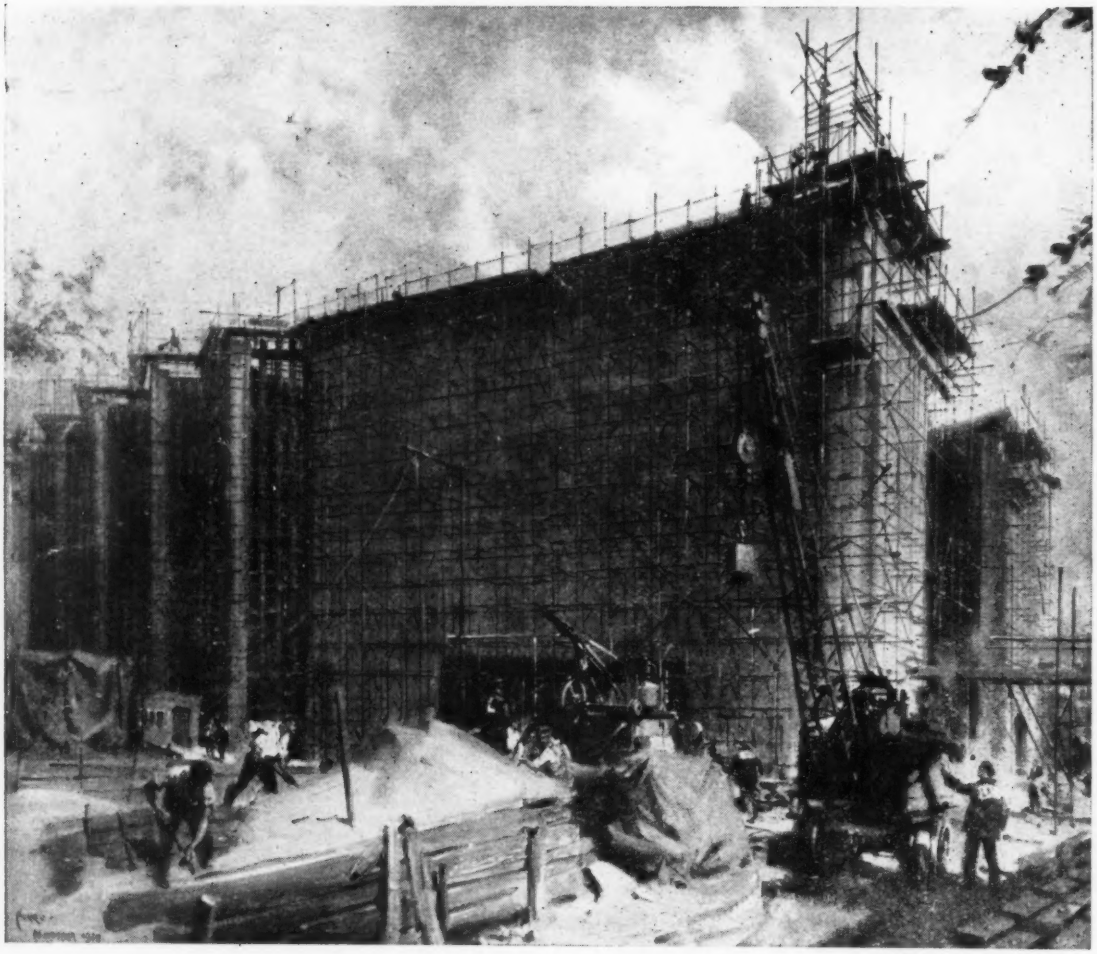
Alternatively complete Batley Up & Over Doors can be supplied in ribbed Aluminium Alloy (£20) or exterior grade Mahogany Ply (£19), or Roller Shutter doors in selected timber laths.

**Generous Trade Terms available**

*Brochure from :-* **ERNEST BATLEY LTD.**

**63g, Colledge Road, Holbrooks, Coventry 89245**

# LAING PROJECT



***The Cathedral Church of St. Michael, Coventry under construction***

*From an oil painting by Terence Cuneo*

Architect: Basil Spence, O.B.E, A.R.A, A.R.S.A, P.R.I.B.A.

In more than a century of uninterrupted progress John Laing and Son Limited have developed one of the most efficient organisations in the building and civil engineering world.

To every Laing project, whether large or small, are brought the same comprehensive technical resources supported by meticulous advance planning—and generations of practical experience. The name of Laing means high-quality workmanship and completion in the shortest possible time.

**JOHN LAING AND SON LIMITED**
**Building and Civil Engineering Contractors**

GREAT BRITAIN · CANADA · UNION OF SOUTH AFRICA · RHODESIA


Printed in Great Britain for the Proprietors of "THE ARCHITECTS' JOURNAL" (The Architectural Press Ltd.), 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, by HARRISON & SONS LTD., by Appointment to Her Majesty The Queen, Printers, London, Hayes (Middx.), and High Wycombe. Editorial illustrations engraved by THE ENGRAVERS' GUILD LTD., Windsor House, 23/26, Cursitor Street, London, E.C.4.